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IDENTIFIERS	*Declining Enrollments

ABSTRACT

School administrators confronted with the possibility of having to close a school need to inform the public, assess community attitudes and needs, and identify the best possible use of the buildings. Existing schools must be reexamined in light of the new need to conserve energy and reduce operating costs. Measures that reduce energy consumption can be taken and, if necessary, schools can be remodeled. The motivation for modernization is now upgrading the environment and remodeling space for change in the educational program, plus phasing out buildings that have outlasted their usefulness. For schools over 100 years old, historic preservation can often restore and adapt them to new needs. Thirty-five successful examples of upgrading existing facilities and, in some cases, changing their function are documented in photographs and floor plans. (MLF)

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To Re-Create A School Building

"Surplus" Space, Energy and Other Challenges

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Foreword

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The present, like any other time, is a very good time if we but recognize it and take advantage of it. Our changing times offer us new perspectives on opportunities to be seized. Significant improvements are needed—about this there is no question. Some resources are available now. Tremendous potentials wait to be tapped. Always there is the vision we must keep in focus—how do we put it all together so as best to serve students and parents?

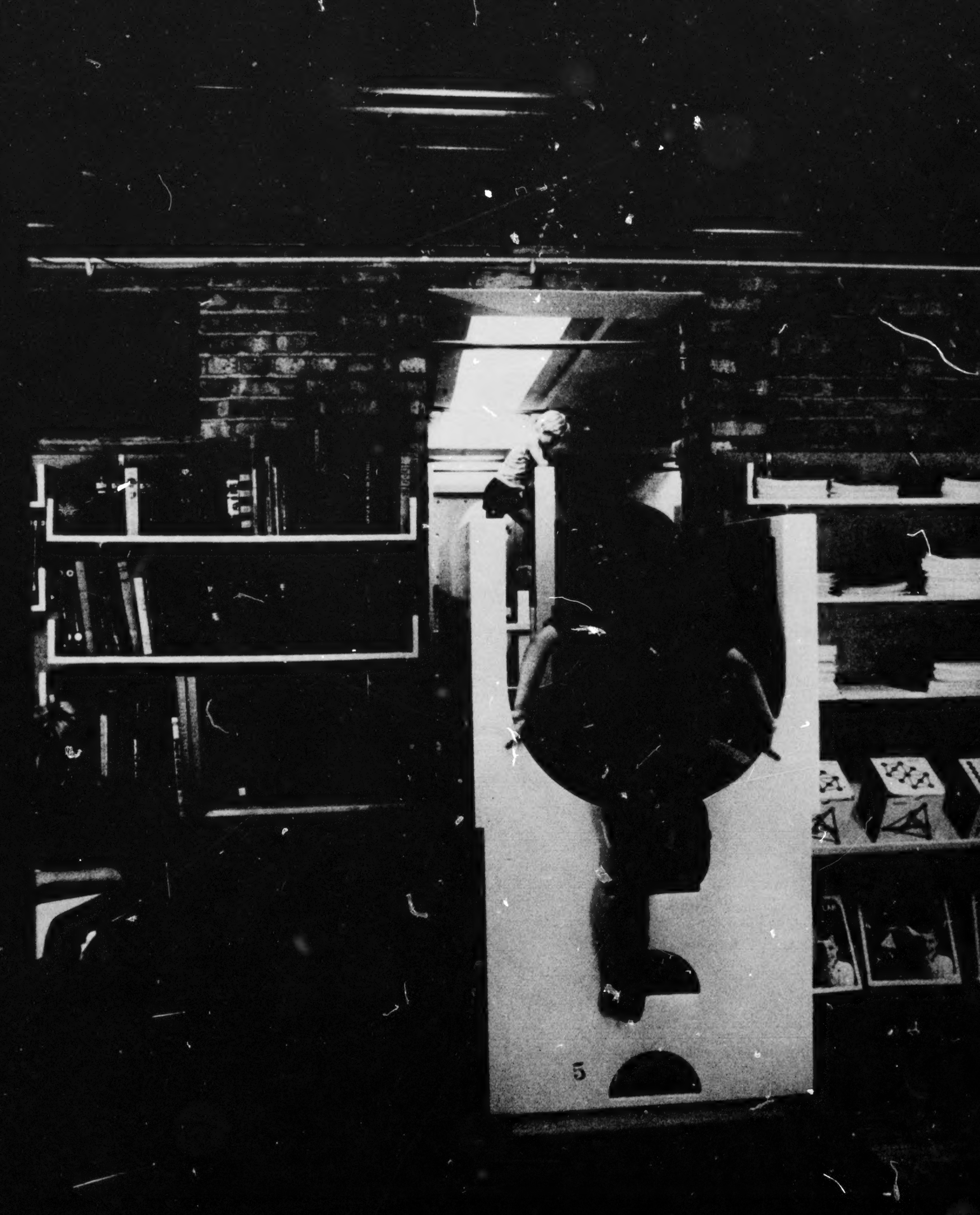
Purse, yes. Without some financial resources, very little moves. But wisdom, careful and creative planning, efficient use of what we have and firm determination to evolve something better may be as critical as the dollars.

Our look ahead, as befits the celebration of our nation's bicentennial, demands a review of the past and an analysis of the present. We seek to do that, in a sense, in this publication addressed to re-creating the school building. We look *back* because we have a legacy of school buildings—some good, some bad, some mediocre. Many buildings, however, are well suited for adaptation to serve new generations of people in necessary, different and exciting ways.

We consider the *now* because energy costs, dollars and today's children are the realities of our daily lives. We look *ahead* with suggestions and ideas to assist in the evolution to that better life we seek for our nation, our children, our communities and our public schools.

This report, prepared by the 1975 School Building Commission appointed by AASA President H. Vaughn Phelps, has been designed to offer some assistance to school building planners as they meet challenges, set goals and move ahead with their programs. AASA expresses its appreciation to members of the Commission and the many other people throughout the country who contributed to this publication.

Paul B. Salmon
Executive Director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Current Challenges

Current Challenges

In system after system across this country, boards and superintendents are deliberating over the disposition of school buildings only partially filled with children. For some the elbow room is welcome relief from the crowded classrooms of a few years ago. Suddenly, it seems, there are spaces for the speech therapist, the itinerant music teacher and other specialists, and for project rooms. For others, with the financial noose being drawn more tightly with each passing month, the economic bite of operating a small school unit outweighs any program advantages.

The obvious solution for these boards and superintendents appears to lie in merging schools and doing something different with the buildings—that is, until the idea becomes an agenda item for action at a board meeting. To the consternation of the decision makers, the buildings to be put to "other uses" overnight become the most unique, potent, effective schools in the system, providing the greatest opportunities for children, the most desirable teacher-pupil relationships, fulfilling essential neighborhood needs and offering necessary security for all those in the surrounding area.

The reasons for the dilemma of so-called "surplus" space are obvious. The number of children with whom to fill all of our schools today simply haven't been produced. Even as family size shrinks, population shifts from area to area, from city to suburb, from single-family
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The reasons for the dilemma of so-called "surplus" space are obvious. The number of children with whom to fill all of our schools today simply haven't been produced. Even as family size shrinks, population shifts from area to area, from city to suburb, from single-family dwelling to high-rise apartment, from rural setting to places where industry or government are engaging in new developments. Dislocation, dispersion and displacement of population result in many school buildings partially filled at best. Where are the children? Examination of demographic data is an increasingly common and necessary activity of school administrators. While these data and long-range projections may indicate increased school-age population in another decade or so, the current situation is one of dwindling student enrollments.

At the same time, the state of our resources is painfully obvious. Costs of energy have skyrocketed. Operational money is more difficult than ever to obtain. Schools find themselves in competition with other agencies and services for tax dollars. Reductions in enrollments have served to diminish the needs of education in the minds of many legislators, and other needs are pressing. Because of inflation and organizational activities, pressures for increased salaries remain unabatedly high. The unions are protective of their members. The present excess of teachers does not effect budget savings as might be expected. Districts find it neither simple nor without risk to reduce personnel to match reduced enrollments.

The psychology of the times affects the schools. *Bigger* is no longer equated with *better*. Many of us choose to drive economical cars and practice at least minimal conservation of materials and energy. Expectations of what the schools might do are perhaps less expansive than they were in the minds of many a few years ago. Some say the schools should "think smaller," reduce programs, and curtail services. In times of economic crisis, "fundamentals only" is not an uncommon rallying cry, particularly at budget time.

The needs of children, however, seem to be increasingly complex and difficult to meet because of changes in society and family structures and because of court decisions. To school administrators it still appears that despite the clamor of some, public education is expected to fulfill a major portion of society's goals, however imprecisely defined, for its young. But, the critics' reasoning runs, with fewer children and less space needs, the job could be done more economically and effectively.

A few years ago *open space* became an important term in public education. Grossly misinterpreted by many and perverted in execution by others, the concept, nevertheless, offers great hope for schools seeking flexible space with differing requirements. Expanded use of materials of all sorts, print and nonprint media, realia, shared programs, teamed efforts, pooled resources, breaking up of rigid and stultifying groupings, diagnosing, prescribing, working with students with special problems, adding nonteacher staff in critical support roles—all become possible in new ways as open space has been tried, refined and restudied. The critics of schools and their uses of space are sometimes advocates of special programs requiring differing space treatments.

Societal changes, economic pressures, legislative and judicial actions serve to intensify the challenges for schools. For example, many of our young people have been "turned off" by the formalized school structure. In response to this, school administrators have increasingly come to believe that an effective instructional program is not confined to *a* place nor to *a* single pattern. Attempts to provide realistic, relevant and rational opportunities have resulted in great diversity of programs. Use of the community as a learning laboratory, alternative modes and flexible individualized arrangements, as well as some traditional instructional modes, have frequently come to exist harmoniously within a single system or even a single building. An emphasis upon career education is bringing about new understandings on the parts of teachers, administrators and patrons about the use of sources and resources within communities.

In another significant development with great implications for education, we find vocational education passing the respectable level and becoming desirable. Many people put great emphasis on the school's responsibility for preparing students for the world of work and maintain that a high school education is sufficient preparation for 80 percent of our nation's jobs. Coupling realistic and practical vocational training with the basic high school program makes sense to a people considered pragmatic. As career education programs open up new vistas for students in their progressions through school, the demand for expanded vocational opportunities multiplies.

On the desk of every superintendent are copies of directives and regulations detailing the provisions of recent legislation concerned with the equality of opportunity for all students, and the elimination of barriers because of sex or minority status. Additional sets of guidelines and directives are aimed toward efforts designed to overcome barriers caused by bilingualism or ethnic heritage. Recent immigration data reveal some of the important changes taking place in the make-up of the people from other lands entering our country. Our schools work with children whose heritage, cultural patterns, religious orientation, food and health practices, and languages are very different from those to which most of its teachers and administrators are accustomed. By legislation, by court adjudication and by policy decisions of local boards, the schools are expected to fulfill a critical role

SEX EQUALITY

The Title IX regulations prohibiting sex discrimination in education have implications for facility use, too. Schools must provide equal opportunity for both sexes to participate in shop courses, physical education and athletics. Programs must accommodate the interests and abilities of both sexes and provide equal opportunity for facility use. Generally, all facilities must be available without discrimination. Locker rooms, toilets and showers for girl students may be separate, but they must be comparable to those provided for boys. Schools may not operate separate shop and home economics classes for boys and girls, nor discriminate in the use of any facilities. School officials in many districts that are now faced with the re-creation of school buildings will use this opportunity to make all programs and facilities available to all on an equal basis.

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in the ceaseless effort to keep our society open, accessible to all, and thus, to assist in the management of our newly emerging pluralistic heritage.

In many states, comprehensive legislation mandates complete programs of instruction for all categories of handicapped children and youth, usually with an expanded age range both downward and upward. The staff, materials, training, space and financial implications of these legislations are beginning to be felt in nearly every school district in the nation. Increased survival of the handicapped, better and earlier identification of deficiencies, more competency in instruction, growth in power of special interest groups, and increased acceptance by the general public that all children and youth be served, place expanded demands

FREEDOM FROM BARRIERS

The architectural design of school buildings facilitates or restricts the full participation of the handicapped in society. Schools filled with architectural barriers to the physically disabled influence the attitudes of children who grow into adults thinking that only the "able bodied" can be full functioning, contributing members of society. Barrier-free buildings and school programs that bring the handicapped child into the mainstream allow children to learn to live together and to cope with disabilities as a part of living.

The recent move toward mainstreaming handicapped children reflects a growing trend to capitalize on new educational technology and teaching methods to combat learning disabilities and to provide each child with the least restrictive learning environment. This poses problems in existing elementary and secondary schools as well as those yet to be built. Nevertheless, as school officials plan programs to meet the needs of all the people in their communities, consideration of barrier-free facilities will be a high priority.

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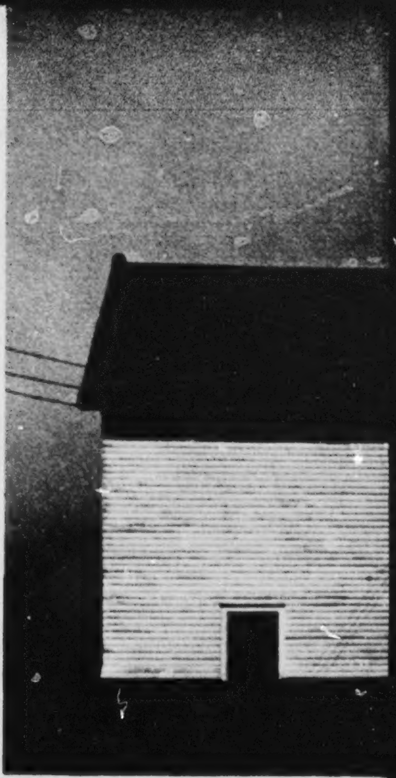

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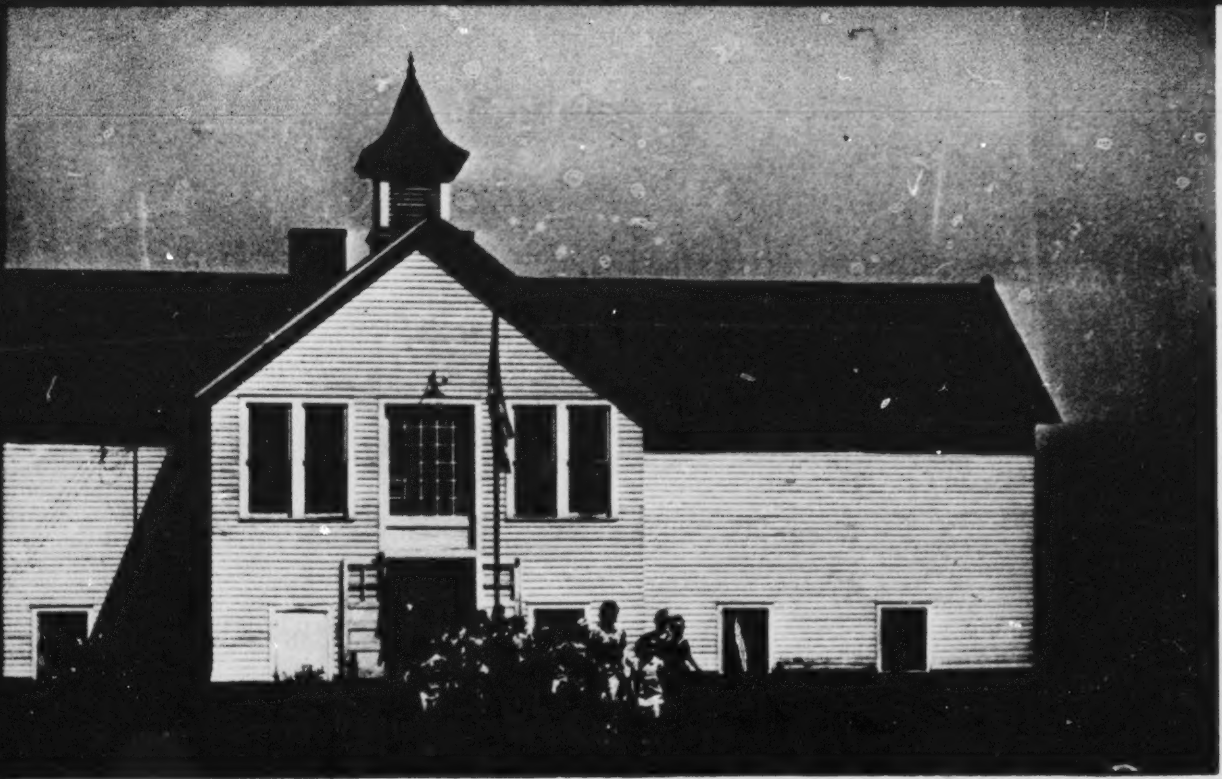
ty.

There are other factors affecting people and bringing change in the lives of clients of the school system. Vast numbers of children in every community are living in single-parent homes. Women are entering the work force of the nation in increasing numbers. Rapid growth of day-care centers and of extended-day programs reflect these phenomena. The "latch-key" child may spend long hours in institutional settings, perhaps delivered at an early hour at a care center or a school with an extended day program and spending as much as ten or eleven hours institutionalized before entering the home by latch key or being picked up by mother or father. The effect upon children of such experiences influences their behavior, their attitudes toward school (another institution), their interpersonal relationships with other children and adults. One effect is to alter the traditional triangular relationship of child-parent-school. Communication links are more difficult to establish and maintain. Pressures increase to have counselor and social worker personnel at the school to assist with adjustment problems of children.

Many children are cared for in haphazard fashion in all kinds of families. For these, early conditioning may come in street schools. The incidence of vandalism, violence and antisocial behavior has risen with alarming rapidity, and contacts between police, school and juvenile court authorities are frequent.

Community school development, programs for senior citizens, widespread use of volunteers and



an emphasis upon the concept of lifelong learning bring many people into contact with the school system who formerly had little direct association with it. Community school and intergovernmental agency cooperative efforts are resulting in some changed perceptions about the school's function in today's society. Melded programs, shared space and responsibilities, joint occupancy and management, merged funding and interchangeable staff are terms with special meaning to places such as Pontiac, Michigan, Arlington, Virginia, and Atlanta, Georgia—places which have sought and found new ways to cooperate in the service of a widened range of patrons and with an almost unbelievable diversity of programs.[1]

Is it called a school if people come to one place to get needed health services, to enjoy recreational opportunities, to have children cared for, to inquire about employment or social security, to visit a library, to attend craft courses and to have their children go to school there? Or is it a new creation in which the school is an important, but only one of many elements?

The nature of public education has been drastically altered by the advent of collective bargaining. The goals of the unions and the associations, even when partially realized, affect nearly every aspect of school operation. Hours of employment become constricted, classes are limited in size, relationships to be maintained with students and parents are circumscribed, and definitions of duties are detailed and proscribed. These are not identified in a pejorative sense, but rather to highlight by limited reference, the kinds of factors that impinge upon the school, its management and the relationships with its clients, the students and those who support the institution through their taxes.

Fewer children; empty classrooms and buildings; escalating costs of everything the school needs and uses; intensified learning, social and health needs of children; views by some that schools try to do too much; financial support increasingly difficult to secure; new attempts for cooperative efforts among governmental agencies to serve a wider range of patrons; the energy crisis are but some of the factors providing the backdrop against which we set a review of the phenomenon of "surplus" space and the challenge to re-create a school building.

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[1] **See American Association of School Administrators. *New Forms for Community Education.* Arlington, Virginia: the Association, 1974.**

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Community Relations

Community Relations

Statutes establish ownership of the schools with the people. The educational system is usually the largest business in each community—serving more people, having more employees, and quite often having the largest budget. Frequently, those who set the policies and those who operate the schools heap responsibilities on their own shoulders, sometimes to a fault. Challenges, problems, successes and failures must be shared through community awareness and involvement. Meaningful interactions between the schools and the community are necessary to establish and maintain quality programs and community support, both of which are essential for effective schools.

Community feelings

Schools are important agencies within our society. Feelings of members of the community vary considerably in scope and intensity. Schools used to be more removed from public involvement. Today more people seek election to boards of education, board meetings are more heavily attended, and comments and press coverage are more frequent. Concerns over rising costs are intense. Those who lead the field in expressing their interests are usually parents of children in school and those concerned about the tax dollar.

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People are alarmed over changing values, increased drug abuse, different living patterns, dwindling credibility of some sections of government and society, and runaway inflation. They resist passage of school bond issues and tax increases. One of the reasons school financial elections fail is that it is difficult to get two thirds of any group of people to agree on anything which is value oriented. Negative community feelings often cause public education, with its local visible taxing procedure, to become a whipping post for society. Community feelings in the seventies are a curious mixture of increased recognition of the need and value of education, coupled with a persistent climate of questioning.

Declining enrollments

Beginning in 1950 we experienced twenty years of brush-fire growth. During this period, we programmed for building with little thought that in the seventies we would be confronted with the need to deal with "surplus" facilities. The reasons for declining enrollments are clear. A shift in social concepts and attitudes combined with the introduction and use of "the pill" resulted in a reduction in birth rates. Land use shifts complicate designation of school attendance areas.

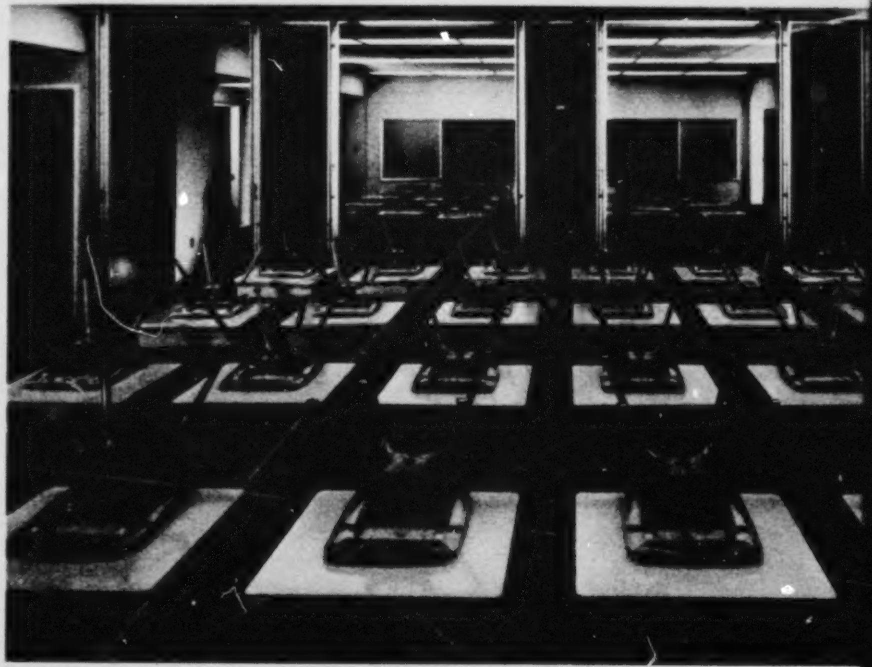
Empty classrooms

"Surplus" facilities always present challenges. People who react most passionately over closing a school are usually those whose children are being redirected to another school, those who tend to challenge efficiencies because they believe the school district may have overbuilt, and those who feel that closure or disposition of the property may not assure proper financial returns to the school district which is taxing them.

Frequently parents fail to accept the fact that they are patrons of the entire district and not just the attendance area of their child's school. There are few newly closed schools that do not have a significant share of students located nearer the school that is closing than the one to which they are being reassigned. Without knowledge and appreciation of the districtwide picture, parents have difficulty in accepting the fact that their children will no longer go to a school they are able to see from their home or a school all the rest of their children attended. Many times transfer to the new school requires busing and, although school bus transportation is among the safest modes of travel, the change, extra transportation time and a loss, in their minds, of their community school, results in organized opposition to closing the facility. Rumors, generalizations and just plain differences of opinion frequently result in severe resistance.

Simply declaring schools surplus is far different than the successful involvement of the community which provided needed schools during the two decades of heavy growth. Preparation and understanding on the part of the community is probably more essential for cutting back than it was in connection with growth. In fact, the hazards for school officials in declining-enrollment districts may be much greater. People are more positive about progress than decline. They react on the basis of the way things seem to them which may be quite different from the way things really are.

School district personnel confronted with the possibility of having to choose a school will want to make an in-depth effort to review, assess and understand existing community feelings and attitudes. Results of studies and assessments can then be carefully considered and incorporated in any plans being developed.



Needs assessment

Once it has been determined that enrollment is declining and surplus space will become a reality, a careful assessment of community needs should be made. Community activities include public and nonpublic endeavors. Educational programs for young people are essential; yet inflation and cutbacks in contributions have trimmed many a budget, excluding those who have genuine needs. Schools are designed and built essentially to house educational programs, yet adaptation of "surplus" facilities for other activities is being examined and achieved with success. Activities involving recreation, nutrition, health screening and treatment, programs for the aged, adult education, occupational training and enculturation to provide more satisfying patterns of life are on the increase. Some surplus schools have been sold to commercial or industrial firms which are able, with remodeling, to make effective use of the facilities. Other uses include storage, parks, museums, motels, hospitals, clinics, child-care centers, apartments and nursing homes.

**NEW YORK STATE EDUCATION DEPAR
URGES MAKING USE OF "SURPLUS" F
TO IMPROVE EDUCATION**

In the May 1975 issue of *Inside Education*, New York Stat
tion Ewald B. Nyquist

> "urged school administrators to use the decline i
> improve the quality of education programs and to ex
> opportunity to population groups which are curren
> served.
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> 'While declining enrollments may give some di
> tunity to close older, less efficient facilities,' Nyquist e
> classrooms and excess teaching resources shou
> improve the quality and equality of educational o
> would include reducing class size in over-crowded
> to provide more individualized attention; establish
> renewal centers for the development of better teach
> materials; converting extra classrooms into specia
> rooms or libraries; establishing community educatio
> ing a greater range of adult education programs, i
> tional education; and creating full-day pre-kinderga
> garten classes, including day care centers."

William Haessig, Director of the Education Department
Facilities Planning, pointed out that many school buildings in t
into many kinds of community service. Among them:

> "● Many districts have turned over classrooms
> area BOCES center for classes for the handicapped.
> for instance, leases classrooms from South Haven
> Manor and Port Jefferson districts and Seton Hall H
> handicapped children should benefit by being in
> capped children, state officials observe.
>
> ● North Rose-Wolcott schools have leased an
> ing to Wayne County's Community Action Progra
> center. The Harrison school district sold two of its
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New York State Education Department. *Inside Education*. May 1975. Pp. 4-5.

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NEW YORK STATE EDUCATION DEPARTMENT URGES MAKING USE OF "SURPLUS" FACILITIES TO IMPROVE EDUCATION

In the May 1975 issue of *Inside Education*, New York State Commissioner of Education Ewald B. Nyquist

> "urged school administrators to use the decline in enrollments to improve the quality of education programs and to extend educational opportunity to population groups which are currently being underserved.
>
> 'While declining enrollments may give some districts an opportunity to close older, less efficient facilities,' Nyquist explained, 'vacant classrooms and excess teaching resources should be utilized to improve the quality and equality of educational opportunity.' This would include reducing class size in over-crowded schools in order to provide more individualized attention; establishing teacher self-renewal centers for the development of better teaching methods and materials; converting extra classrooms into special art and music rooms or libraries; establishing community education centers; providing a greater range of adult education programs, including occupational education; and creating full-day pre-kindergarten and kindergarten classes, including day care centers."

William Haessig, Director of the Education Department's Division of Educational Facilities Planning, pointed out that many school buildings in the state are being pressed into many kinds of community service. Among them:

> "• Many districts have turned over classrooms or buildings to an area BOCES center for classes for the handicapped. Suffolk BOCES 2, for instance, leases classrooms from South Haven, Sayville, South Manor and Port Jefferson districts and Seton Hall High School. The handicapped children should benefit by being in with non-handicapped children, state officials observe.
>
> • North Rose-Wolcott schools have leased an elementary building to Wayne County's Community Action Program for a day care center. The Harrison school district sold two of its buildings to the town, one for a youth center and one for senior citizens.
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> • On Long Island, Islip's Main Street School has been sold to the town for an office building. Commack is selling its Marion Carll Elementary School to New York Institute of Technology for use as the college's Suffolk County campus.
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> • In Cortland, a junior high was sold to the county for an office building for about $500,000. And, Ithaca's DeWitt Junior High was bought by a private owner who has converted it to apartments on three stories above a store on the ground floor.
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> • With higher enrollments ahead, Copake-Taconic Hills schools are dickering with the city of Hudson to lease one of the city's old school buildings temporarily until they can decide on future building plans. This is a case of possible leasing of schools across district lines, permitted in the law where the districts adjoin. Usually the population is declining over a whole region, making interdistrict transfers unlikely.
>
> • In the Schenectady area, voters in Mohonasen school district have decided to sell a school to the town of Rotterdam as a center for senior citizens and youth groups. Guilderland rents the ex-Fort Hunter School to the Hebrew Academy, a religious school. Schenectady city schools continue to put additions on their better buildings to enable them to close several older ones.
>
> • Nearby, the South Colonie school board is selling its old Roosevelt School to a private firm which plans to conduct home improvement classes in the building."

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Many states such as California have statutes which establish schools as civic centers for use by community organizations. Some communities, finding they have a "surplus" school building, organize and use it as a community meeting and activity center. Depending on the need, it might house activities of boy scouts, girl scouts, camp fire girls, service clubs, dance clubs, fine arts programs, arts and crafts, and senior citizens groups. The school, with its multiple classrooms, food service facility, multipurpose room or auditorium, outdoor playground and parking facilities can become a community asset rather than a target of emotion, criticism and vandalism. Location, of course, could be a problem, but the availability and added versatility of the building might offset location disadvantages.

Other public agencies may be in need of space. Community colleges and adult education programs are on the increase. Both are quite adaptable to elementary or secondary school facilities. City and county recreation programs, community libraries or other local, county or state government programs may need space. A rising trend in our nation—and many others—involves expanded community education programs. This movement has been enhanced with federal legislation designed to allocate funds for community-based establishment and operation of community programs throughout the nation. The program is significant for personnel not enrolled in a formal school. It involves recreation, education and all kinds of activities of interest to people who have not previously had opportunities for such involvement.

A community could easily make profitable use of "surplus" facilities for all kinds of people-serving functions.

Before recycling or disposing of "surplus" space, school officials may also want to take a careful look at the possibilities of alternative schools. New and different programs do not always require separation from a main student body, although in some instances relocation is beneficial. Available space will enhance opportunities for school officials and their communities to consider alternative school programs.

Assessment of needs is essential; good decisions can't be made without valid information.

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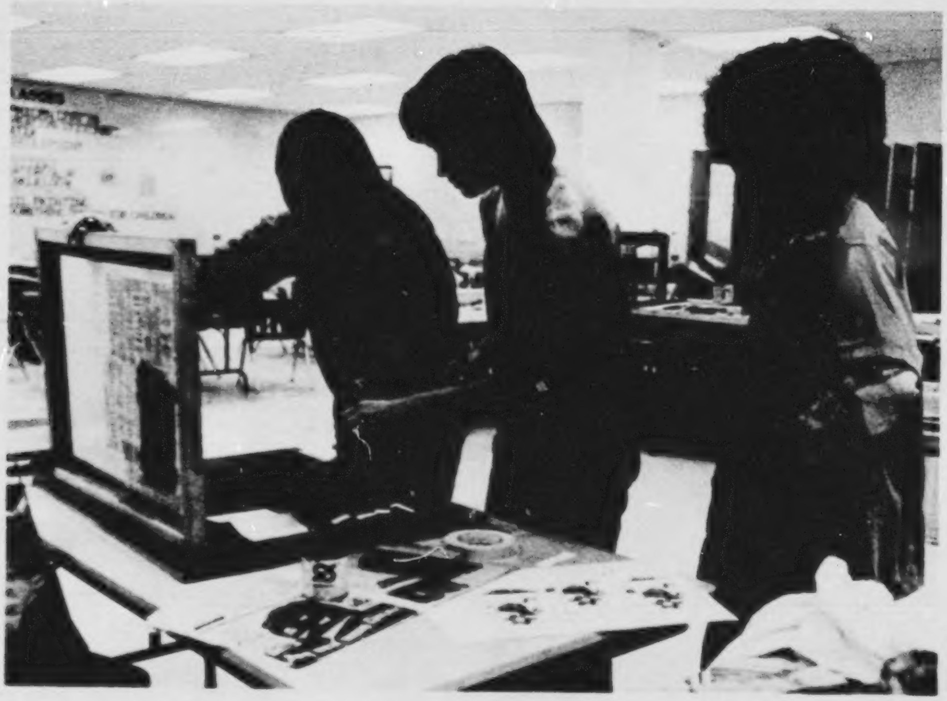

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Assessment of needs is essential; good decisions can't be made without valid information. Community assessment should involve more than simply getting a few people together to discuss the matter some Friday afternoon. To be successful, it is well planned, allows adequate time and is scheduled to permit in-depth contacts and evaluation. It includes contacts with all appropriate individuals or groups within the community, and it could easily require several months.

Effective communication

Challenges for school systems must be concerns of the people. Communities are composed of individuals, families and groups. All respond on the basis of how things seem to them. It is essential that those responsible for school district affairs establish and maintain an effective system of communicating with everyone. Two-way communication is essential. Information for the public must be prepared and disseminated by the school district and careful consideration given to opinions, feelings and expressions from the public.

School officials must level with the people. It is not possible for school districts to operate in isolation. Schools are a part of the community, not an agency with complete operational autonomy.

Timeliness is a major factor in productive communications. Exchange of information and formation of attitudes must have sufficient time for careful assessment. Single message information sent too close to the date of proposed action is usually not adequate to secure understanding and support. If the school district is confident it will soon have surplus schools, advance contact should be made with the community. Then, when declining enrollments and the need for closing or re-creating facilities becomes a reality, it will tend to be received with less abruptness than waiting to communicate when the time for closing arrives. If the enrollment trend stabilizes or turns upward, nothing is lost.

Unless mismanagement is in the picture, the schools do not create the circumstances that result in "surplus" facilities. Too little or too much space is directly tied to the number of pupils. The community, with its fluctuating patterns, determines the actual enrollment. It is essential that material prepared by the schools for dissemination to the public clearly identify circumstances and responsibilities in connection with school enrollments.

Information must be prepared with the recipient clearly in mind. Being right does not always stimulate the desired response. A person must not only be right, but seem to be right. Field testing assures effectiveness. Positive responses are usually geared to understanding.

Symbols are significant. Boarding up windows for security purposes is like erecting a billboard telling the public that their investment is unused. Unused, a facility becomes a symbol of deterioration. The public likes to feel its monies are well spent. Letting a school stand empty stimulates all kinds of negative responses. Locations of schools, use of buses, character of the community surrounding the facility and constructing new facilities in one section while closing in another all stimulate responses.

Adequate preparation is imperative. Activities include analysis of past history of the district, the status quo and probabilities for the future. Data collection is pertinent and complete. Factual information clearly stated is far more valuable than generalizations which tend to stimulate suspicions. Some suggestions to assist in maintaining effective communication are:

- Sit down with affected members of the community and candidly present problems and possible solutions. Make every effort to review options jointly. Responsibilities of the board of education and school staff need not be abdicated. If the sessions are afforded adequate time for sincere analysis and communication, community shock waves resulting from closing or re-creating a facility might be avoided.

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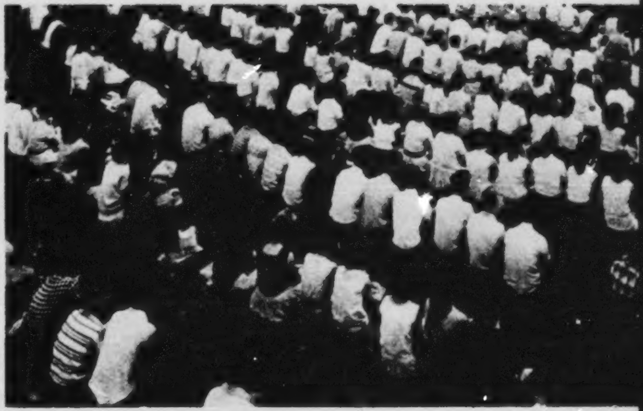
- Don't overlook the value of a well-informed staff. Bringing the principal, teachers and clerical staff of a school where shifted pupils will be attending into personal contact with parents is usually fruitful.



- Conduct an open house in the new school for the parents. Such involvement usually provides assurances regarding staff, programs, facilities, and other factors of interest in the forthcoming change involving their children.
- Involve "new" parents in PTA activities. This helps make the parents and children feel welcome and a part of the team.
- Arrange a field trip for children to their new school. Young people like adventures. Exchange assemblies or visits by student body officers are worthwhile.
- Demonstrate that the quality of the program in the new school will be equal to the program of the school which is being declared as surplus.

Solution through prevention

Recognizing that school districts are badgered by a multitude of problems, today's successful administrator converts problems into challenges. Problems tend to identify with bog, while challenges suggest action and achievement. Problem solving through prevention is far more efficient than reacting to situations that could have been avoided. Productive teamwork with the community is far more rewarding than stifling district autonomy.

To meet the challenges of declining enrollments and "surplus" facilities, thoughtful school officials will:

- Provide adequate staff time to assess community attitudes and politics and to prepare materials and service community contacts.
- Develop and implement appropriate contacts with the community. Provide clear, valid information, indicating the values (usually money) which will accrue from closing a school or changing its function.
- Be certain that the facilities are in fact or will become surplus. Analyze all existing and future needs of the school district. Examine existing class size, special projects needs, status of operational space, enrollment trends and any plans or needs that might necessitate the additional facilities.
- Determine whether the surplus is temporary. If the probability for use at a later time seems reasonable, arrangements might be made for a variety of uses of the facility during the interim period. Possibilities include making the facility available for other public agencies, community organizations or the private sector.

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- Close the right facility. An unneeded school may not be the oldest. Location may have a greater priority than condition of the plant. Factors to consider include density of population, transportation needs, possible community shifts, plans for new developments in the community, potential attendance area enrollments and operational economics.
- Use portables for spotty growth, particularly if schools in another area of the district are being closed.
- Identify the best possible use of the buildings. If, after careful consideration, the facility is declared surplus for school uses, then a careful assessment should be made by school officials and the community. Surveys covering all possibilities will generate valuable data. The public paid for the school and will expect to receive fair value when changing the purpose for which an investment was made. If it is decided to transfer ownership for less than the appraised value, the board of education should be certain its new use is for the public good of the community and has its support.

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Howard County, Indiana—

This one room schoolhouse in Howard County, Indiana, was built in 1896 and originally a part of the local school district. It has recently been refurbished and used as a commercial specialty shop.

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- Be fully knowledgeable of provisions of the law. Expertise likely exists as far as building new facilities and acquiring additional properties are concerned; however, many school officials facing the challenge of surplus facilities may find it to be a brand new experience. Actions should be reviewed with legal counsel so no false moves are made. Having to retract is very damaging in the eyes of the public.
- Do not procrastinate. Delay aggravates the situation. Action with a clearly defined plan generates confidence. Timing is important.

Energy and Materials Conservation

Energy and Materials Conservation

The age of energy and materials conservation demands a re-evaluation of how school facilities are planned and utilized. The energy crisis has not disappeared. Federal authorities, private companies and consultants predict that shortages will continue, and therefore the cost of energy will continue to rise.

In past decades, energy was cheap and the supply was thought to be inexhaustible. Before World War II schools used energy primarily for heating and lighting (and some gasoline for school buses). After World War II a number of new factors dramatically increased energy consumption for education.

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First, heating and ventilating standards were raised. Unit ventilators, for example, replaced natural ventilation. Then, air-conditioning gradually became a standard, providing year-round climate control, including cooling and dehumidification. This caused a sharp increase in energy use.

Concurrently, lighting standards were substantially increased. By the 1970's lighting levels of 50 to 100 footcandles were common. Not only did this require large increases in electricity to provide the new higher lighting levels, but the lights also generated heat which required even more energy to operate air-conditioning to remove the heat.

Air-conditioning generated the windowless school concept and large compact floor areas with minimum exterior walls. Such buildings were totally dependent upon electric, gas and oil powered machinery for ventilation, heating and cooling, and electricity for lighting.

This was in sharp contrast to earlier school design that emphasized natural lighting and natural ventilation. However, the argument for the sealed and controlled environment was "energy is cheap."

Meanwhile, the size of schools increased. This meant that both students and teachers traveled farther to school and more of these trips were made by automobile or bus. That process required much greater consumption of gasoline.

Demands for desegregation and for special education also increased the use of buses. When such programs were initiated, no one anticipated the energy crisis that suddenly emerged.

Other factors increased the use of energy for education. Computers, electric typewriters, copying machines, and other tools consumed electricity and produced heat loads to be removed with additional air-conditioning. Buildings were too often constructed at minimum cost, which meant minimum design standards. Roof and wall insulation suffered, justified by cheap energy. The thick walls, sheltering roof overhangs and well insulated, pitched roofs of earlier buildings were rare after World War II. The new schools too often were not landscaped properly and roofs, walls and windows, therefore, did not enjoy protection from the elements by trees. Finally, air-conditioning systems were selected for low first cost, not for economical operation and most efficient use of energy.

The "energy is cheap" syndrome affected cost accounting. The economies of school design and operation were evaluated then on the basis of facts known at the time. But facts change.

Energy once was cheap, but that has changed, and the cost of electricity, gas, oil and coal will continue to rise faster than other prices. Operating costs of school facilities have become a much more significant part of the total cost of education. Therefore, we are all rather suddenly motivated to re-evaluate the design and use of schools.

With enrollments level or declining, many communities will be building fewer new schools (although many obsolete facilities should be replaced in the interests of better education and lower operating costs). Meanwhile, existing schools must be re-examined in light of the new need to conserve energy and reduce operating costs. Some buildings will continue to serve education effectively with only minimum change. Others will require substantial change and improvement to satisfy educational needs and to achieve reasonable operating and maintenance costs. Still other existing school buildings will be good candidates for re-creation to serve new educational functions or noneducational uses, in which case they will usually be sold to other public or private users. Some schools should be demolished and replaced with new facilities that are more properly attuned to contemporary needs. Finally, some schools should be demolished and the land sold.

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Architects Mahony and Zvosec of Princeton, New Jersey purchased this building, formerly Penns Neck School, from the West Windsor Board of Education. It was constructed about 1906, was actively used as a school until 1967, and was vacant until 1972 when the architects decided it would serve their purposes well.

Structurally, the building is very sound and the original mechanical systems are still being used. Nothing was done to the exterior, except trim painting and some site landscaping. Even the inside was not altered structurally, but has been "re-created" with supergraphics.

The entire lower level is rented to a sculptor who has a very active and interesting operation. This view of the back of the building shows some of the oversized sculptured busts done by the tenant. They appear to be superimposed on the photo, but actually are not. They are resting on an earth berm that surrounds the parking lot.

Evaluating existing facilities

Deciding what to do with buildings is a complex task. Sound decisions on which buildings should be used, and how and what improvements are needed requires thoughtful coordination of the needs of education (and more often now, other community needs) and the evaluation of existing facilities. Outside assistance is often useful. An architect and engineer with broad experience in school planning and construction can be valuable members of the team.

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Taking stock

The logical starting point for an evaluation of existing facilities by a school district is an up-to-date inventory of all of its school property. A comprehensive property accounting is essential. In addition to the traditional factors—location, site size, building size, number of rooms, number of students—the property accounting should include measurement of the condition of the buildings, degree of flexibility and adaptability, the cost of maintenance, the cost of operation, energy systems, the amount of energy used, and the cost of energy consumption. With operation and maintenance costs rising, such an accounting will reveal much about the future prospects of using each school.

SAFETY AND HEALTH

In planning both new buildings and the recycling of e
should be considered for the protection of safety and health.
In 1970, Congress passed the Occupational Safety and
into effect in 1971. This new law makes it illegal to work in an
published standards. OSHA inspectors identify violations,
penalties for non-compliance, and employers have to pay pe
The goal is to assure safe and healthful working co
employees were not covered by the Act, so schools are e
school district can adopt the OSHA standards, and it is gene
the standards. Note, however, that private schools are inc
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standards apply.
The U.S. Secretary of Labor was charged with establishi
was established to pass on the appropriateness of citations an
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to assume responsibility. Recognizing that states have their
when OSHA and local rules do not agree, the most stringe
Building designers already had to comply with zonin
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previously, specific federal laws did not enforce all aspects
Now, under the OSHA law, architects and engineers an
nizing potential liability, are more concerned with the safety
OSHA regulations are published as standards in the Fe
contains the data of most concern to building designers an
OSHA's standards are organized into six major catego

(1) Workplace standards (including electrical wiring, il
lation, housekeeping, fire protection, exits, stairs, a

(2) Machines and equipment standards (including han
ery, and trucks).

(3) Materials standards (including hazardous materi
storage).

(4) Employee standards (including first aid, protective

(5) Power source standards (including electric power
baking equipment).

(6) Process standards (including grinding, exhaust s
welding).

In addition, OSHA standards include many existing nati
spelled out in detail in the National Electric Code, and by
Association (which publishes the influential "Life Safety C
three years).
In conclusion to this brief summary, OSHA imposes ne
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and the standards are getting to be more strict. Since each
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of using each school.

Evaluating existing facilities

Deciding what to do with buildings is a complex task. Sound decisions on which buildings should be used, and how and what improvements are needed requires thoughtful coordination of the needs of education (and more often now, other community needs) and the evaluation of existing facilities. Outside assistance is often useful. An architect and engineer with broad experience in school planning and construction can be valuable members of the team.

Educational and community needs are discussed elsewhere in this report. Here the focus is on energy factors and the physical facts of buildings and sites. The following deserve consideration:

- Know the present condition of your buildings and sites. Determine the desired conditions. Then the required improvements can be identified and cost estimates made. With cost estimates available for each school (and total education needs predicted), a master plan can be developed, determining which schools can be used with only minimum improvement, which schools require major improvement, and which schools can be disposed of.

SAFETY AND HEALTH

In planning both new buildings and the recycling of existing buildings, a new law should be considered for the protection of safety and health.

In 1970, Congress passed the Occupational Safety and Health Act, and OSHA came into effect in 1971. This new law makes it illegal to work in an unsafe place. Now, following published standards, OSHA inspectors identify violations, issue citations, and impose penalties for non-compliance, and employers have to pay penalties.

The goal is to assure safe and healthful working conditions. Federal and state employees were not covered by the Act, so schools are exempt. However, a state or school district can adopt the OSHA standards, and it is generally good practice to follow the standards. Note, however, that private schools are included in the Act. Also, if a school building is converted to other uses, for private business occupancy, then OSHA standards apply.

The U.S. Secretary of Labor was charged with establishing standards. A commission was established to pass on the appropriateness of citations and penalties. The Secretary of Health, Education and Welfare was charged with doing research. States were encouraged to assume responsibility. Recognizing that states have their own safety and health codes, when OSHA and local rules do not agree, the most stringent requirement is to prevail.

Building designers already had to comply with zoning laws and building codes, which, under the police power of the state, protect public health, safety and welfare. But previously, specific federal laws did not enforce all aspects of safety and health.

Now, under the OSHA law, architects and engineers and building operators, recognizing potential liability, are more concerned with the safety of employees.

OSHA regulations are published as standards in the Federal Register. "Part 1910" contains the data of most concern to building designers and operators.

OSHA's standards are organized into six major categories:

(1) Workplace standards (including electrical wiring, illumination, sanitation, ventilation, housekeeping, fire protection, exits, stairs, and walking surfaces).

(2) Machines and equipment standards (including hand tools, power tools, machinery, and trucks).

(3) Materials standards (including hazardous materials, materials handling, and storage).

(4) Employee standards (including first aid, protective equipment, and scaffolding).

(5) Power source standards (including electric power, steam power, laundry and baking equipment).

(6) Process standards (including grinding, exhaust systems, spray finishing, and welding).

In addition, OSHA standards include many existing national standards, such as those spelled out in detail in the National Electric Code, and by the National Fire Protective Association (which publishes the influential "Life Safety Code" which is updated every three years).

In conclusion to this brief summary, OSHA imposes new and complex rules on how new and old buildings are to be designed and operated. New rules are added periodically and the standards are getting to be more strict. Since each state has its own laws, which will be more demanding in some instances, the subject is a complex one.

However, generally the standards demand common-sense protection of employees' safety and health. Compliance does not impose excessive costs.

- Evaluate each building in terms of the flexibility and adaptability it offers for future change. Since demographic facts are changing, a structure offering a high degree of flexibility will be more valuable than a rigid building that would be costly to change.

- Face the facts of maintenance and operation costs. Some existing buildings will get low marks which will influence decisions to save, replace, or abandon facilities. Where maintenance and operation costs are relatively low, buildings must be evaluated as more valuable resources and will be more important components in forming future plans.

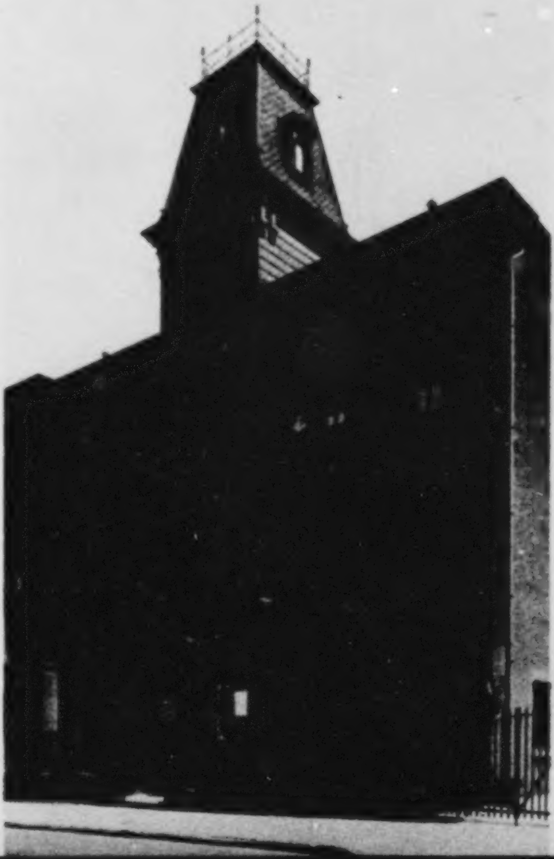
- Know your energy system, what and how much energy is used, how systems are operated, and what the cost of operation is. Usually, operating costs can be reduced by adding better controls, minimizing exhausted heat, lowering light levels, turning off lights, or by modernizing air-conditioning systems and relying on natural ventilation in mild weather. The changing facts of fuel availability and cost must be considered and changes in systems may be necessary.

- Don't assume all old buildings are inferior to new buildings. Some old buildings have thick masonry walls that will get high marks in the age of energy conservation. Some are reasonably adaptable to new programs. Some have local historic or sentimental value and have become landmarks that citizens want to save, just as they want to save "Old Main" on their college campus. And some old buildings are beautiful, especially when well landscaped. These are the structures that must be measured, physically and emotionally, to determine future possibilities for continued use.

- Don't assume all old buildings are worth saving. When buildings are ugly, poorly planned, nonfireproof, structurally unsound, or in poor condition (requiring excessive cost for rehabilitation) then demolition is still an appropriate action. In addition, when schools no longer enjoy convenient locations, then disposal of the property will be logical. Urban renewal and redevelopment of surrounding land sometimes removes housing and introduces other land uses, as for commerce or industry or transportation; in that case, school buildings and land can be sold at favorable prices.

- Don't assume all relatively new buildings are superior to older buildings. We all know of post-World-War-II schools that will get low marks in an honest property accounting. The history of a building's operation and maintenance costs will influence future plans for it. A key consideration is what improvements are needed and how much they will cost.

- Consider changes of function. High schools can become middle schools. Grade organization can change, making the K-6 schools K-4 schools. Schools can be broadened in context, becoming community centers which include other community services, and the range of educational offerings can be expanded to include day care, pre-school, career education, community college courses, adult and continuing education.



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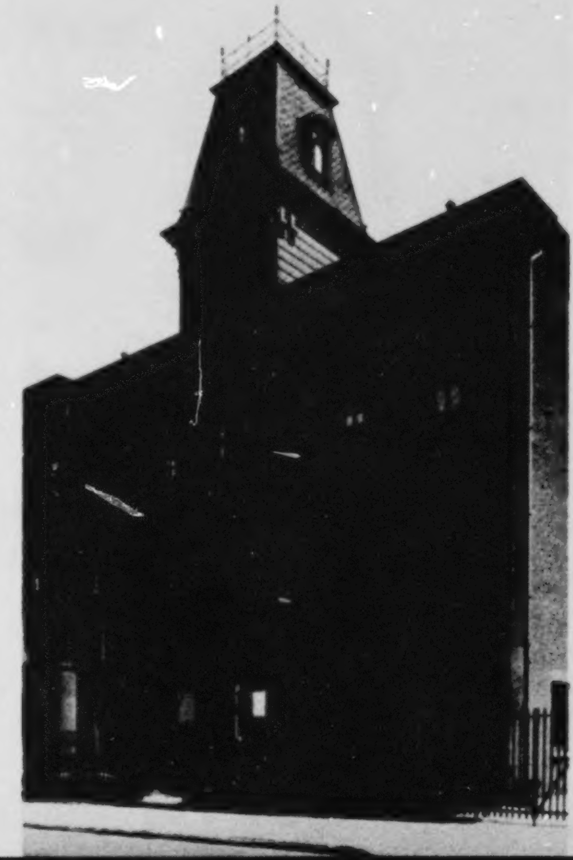

The world is changing and schools will change. Enrollment patterns, the expectations of citizens, and community needs are changing. Existing facilities must be analyzed, evaluated and re-created to respond to the new needs.

Reducing energy consumption

The energy crisis is a growing concern for everybody, especially school administrators who are aware of both the ethical problems and the increased costs in operating facilities. The following suggestions (many of them developed by the Association of California School Administrators [1]) show how energy consumption can be substantially reduced in operating schools:

Interior lighting

- Turn off lights when spaces are not in use. When energy was abundant and cheap, we all developed the habit of leaving lights on, even when rooms were unoccupied. Now it is important to change that habit. Teachers and students must be encouraged to conserve lighting energy and custodians should be instructed to turn lights on only when spaces are being cleaned.
- Reduce lighting levels. We recognize that the classroom lighting levels recommended in recent past decades were often excessive. In two and four lamp fluorescent fixtures, half of the lamps can be disconnected or every other fixture can be disconnected. The resulting light levels will not be cut in half. Corridor lighting can be reduced. In incandescent fixtures, lamps of smaller wattage can be used. By reducing lighting levels, air-conditioning loads are also reduced, saving additional energy. A recycling program offers the opportunity to redesign for savings.
- Use efficient fixtures. Some of the new lamps are much more efficient than older types. Fluorescent, mercury and metal-halide lamps provide more light per watt than do incandescent lamps.
- Keep lamps and fixtures clean to achieve maximum light output for wattage input.
- Use light colored walls, ceilings and floors. This increases efficiency of lighting systems. Keep surfaces clean. Dark and dingy surfaces do not reflect as much light as clean surfaces.
- Replace lamps periodically. Fluorescent lamps with discolored ends are not efficient. Lamps are usually efficient for 2 or 3 years, then should be replaced on a group basis.
- Use multiple switching for medium and large spaces. Often it is unnecessary to turn on all lights in a room.
- Use task lighting for higher illumination for specific work areas instead of illuminating a large space at a high level. For example, a desk lamp in an office may require only 60 or 100 watts, while ceiling lights consume 2 or 3 times that much energy.
- Turn off business machines, kitchen and other equipment when not in use.
- Utilize natural light. It can be controlled with adjustable horizontal or vertical slat blinds, eliminating direct glare while reflecting natural light into room interiors.

Exterior lighting

- Install photo-electric switches and timers to turn lights on when actually needed and off when not needed. Exterior lighting is high wattage and should not be used when there is no specific need.
- Use the most efficient lamps. Mercury vapor and sodium vapor lamps, for example, produce more light per watt than older types.
- Reduce decorative lighting. Landscape and sign lighting can be operated fewer hours at night.
- Avoid night football and baseball games. Night lighting can simply be eliminated for playfields. Reschedule night football games to Saturday afternoon.

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[1] Association of California School Administrators. *Management Action Paper,* Vol. 3, No. 2. Burlingame, California: the Association, 1975.

Heating, ventilating and air-conditioning

- Keep thermostats turned down in the heating season and turned up in the cooling season. Americans have developed the habit of trying to achieve year-round uniform temperatures only in recent years, at great cost in dollars and energy. By encouraging staff and students to wear appropriate seasonal clothing, schools can be cooler in winter and warmer in summer. *Recommended temperatures are 68° in winter and 78° in summer. Thermostats can be locked to prevent unauthorized changes.

- Do not heat and cool areas unoccupied for long periods of time. Auditoriums, some shops and labs can have reduced heating, cooling and ventilation when not in use.

- Improve insulation and weatherstripping. Just as homes can save fuel costs by adding insulation and minimizing infiltration of air through doors and windows, schools can also be made more efficient. A re-creation program should include such consideration. Roofs and walls may require added insulation. Old windows may be replaced with tighter windows. Exterior doors may need weather vestibules. Draperies can improve comfort while reducing energy requirements. In older buildings, attic fans can reduce heat buildup.

- Shut off air-conditioning systems when buildings are not occupied. Close outside air dampers during unoccupied hours and stop exhaust fans.

- Activate systems later in the morning and deactivate earlier at the end of the day. Heating can be turned down automatically approximately an hour before students leave. Air-conditioning can be reduced before classes end. Chillers can be turned off even earlier, recognizing the "flywheel effect," meaning a certain cooling capacity continues to be available.

- Check efficiency of heating, ventilating and air-conditioning systems. This is a complex task requiring qualified mechanical engineers. Often outside consultants make a study of all equipment and operating efficiencies and make recommendations for improvements to gain better results from energy consumed. In recycling an older building, new equipment and controls may be a good investment.

- Reduce ventilation levels, especially exhausted air. Heat leaves a building with exhausted air. If existing practices prove to be excessive for comfort, savings in energy can be made. Bringing in excessive outside air, as with unit ventilators, can be costly.

- Avoid systems that involve simultaneous cooling and heating.

- Be certain maintenance of mechanical equipment is adequate. Boilers, chillers, fans and control devices must be in good operating order and clean for systems efficiency. Repair steam, water and air leaks. Lines and ducts should be properly insulated. Filters should be clean.

- Use automatic control systems. Time clock operation can improve efficiency.

- Avoid use of portable electric space heaters, window air-conditioners, and other makeshift climate controllers. They are generally inefficient.

- Close off rooms that are not currently needed. Schools with excess space should regroup activities, closing clusters of spaces to save mechanical and electrical energy use.

- In re-creating an existing building, consider modern heat recovery systems. Good mechanical design now stresses the most efficient kinds of heat transfer, recognizing the facts that people and lights produce heat, that ventilation requirements can be responsible for substantial heat losses and that some of this heat can be recovered.

- Turn off heating, ventilating and air-conditioning systems in moderate weather. Most schools enjoy many months of temperate weather when the natural ventilation provided by windows is acceptable if staff and students develop a reasonable tolerance for temperature ranges.

PUBLIC SCHOOLS ENERGY CONSERVATION SERVICE

Educational Facilities Laboratories, in partnership with the Federal Energy Administration, has developed a computer-based technical service designed to help school districts help themselves in conserving energy.

> "As presently envisioned, the service would be capable of providing each participating district with information in five areas:
>
> (1) Guidelines and instruction for establishing a district wide energy usage data base.
>
> (2) A comparison of the energy usage at each of the districts plants with minimum wastage guidelines established by computer simulations and a nation wide data base of similar schools.
>
> (3) A 'self-help' plant operations audit prepared with computer assistance for each school, which should allow the district to reduce plant energy usage to guideline levels.
>
> (4) A cost/benefit analysis of modifications requiring capital investments tailored to each school plant.
>
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Educational Facilities Laboratories. *Information about the Public Schools Energy Conservation Service (PSECS),* informational communication. New York: the laboratories, 1975

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Water heating

- Reset hot water heaters at 100°. Often water is unnecessarily heated to 140° or more. Where hotter water is required (as for the kitchen) local booster heaters can raise the temperature.
- Repair leaks. One leaky faucet can waste 300 gallons of hot water a month!
- Improve the hot water system. Insulate pipes. Add time clocks to turn off circulating pumps and heater when not needed.
- Be certain showers in locker rooms are used reasonably. Lower water temperature in swimming pools. In kitchens run dishwashers only with full loads.

Transportation

- Recognizing the great amount of energy consumed by school buses, plan efficient routes with full loading. Increase walking distances. Turn off bus engines when stopped for over two minutes. Use only buses with proven good mileage records.
- Limit use of other district vehicles. Combine trips. Reduce speed limits for district vehicles. Use only vehicles with good gas mileage.
- Encourage car pools by parents, students and staff. Limit parking facilities to discourage overuse of cars with only the driver. Give cars with four or more riders preferred parking spaces.
- Promote bicycles. Work with city planners to achieve safe and convenient bicycle routes.
- Promote walking. Legs are still the best people movers for many trips. Walking is recognized to be an excellent form of exercise for most people. Might walking be a part of the physical education program?
- Assign staff to schools near their homes.

Scheduling and use of buildings

- Decrease the length of the school day. In the winter a half hour to one hour later opening will save fuel by allowing extra time for natural warm-up of buildings and heating will be required for 2½ to 5 fewer hours during each week. In the summer earlier closing will save hours of air-conditioning.

- Decrease the length of the school week. Some schools are considering a four-day week. This action could save 20 percent on electricity and fuel.

- Close school when weather is exceptionally cold. Without intent some schools close now, so such a plan would not be a traumatic change in practice.

- Rezone the school district to achieve full occupancy in most convenient schools, while closing others. A fully utilized building is most efficient. A building only partially occupied requires excessive energy per pupil for operation.

- Stress outdoor sports and physical education. Lighting, ventilating and heating the traditional gymnasium requires substantial energy consumption. The extreme energy-wasting example is indoor tennis, with the lighting costs easily understood, since they are user charges. Lifetime sports (outdoor tennis, golf, bicycling, hiking, boating and swimming) are fortunately outdoor sports which require relatively little fossil-fuel energy.

- When buildings are used on a limited basis at night, heat or cool and light only those areas actually in use. Zoned systems are necessary, to selectively operate only needed areas. When possible, night classes, staff and public meetings should be consolidated in certain building areas.

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Finally, develop a public awareness campaign to remind staff, students and members of the community that the energy crisis is real and that the school system depends on the cooperation of everyone to reduce the use of energy, both in the interest of conservation and to save operating costs when the cost of energy is dramatically increasing in response to the recognized shortages of supply.[2]

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[2] See *The School Administrator*, September 1975, for information on available educational materials and on energy prospects.

Space Options

Space Options

"New Life for Old Schools" has taken on an added meaning. A year or so ago the term would have meant modernizing an old school to continue to serve as a school. Today, it still means this *plus* the possibility of giving the school building a new life, housing educationally related or non-educational functions. Often the school in question is relatively new—painfully so in some cases. Today's headlines testify to the uproar resulting from the suggestion that a school will be closed. This problem is dealt with elsewhere; the purpose here is to give some basic help to the school administrator exploring space options.

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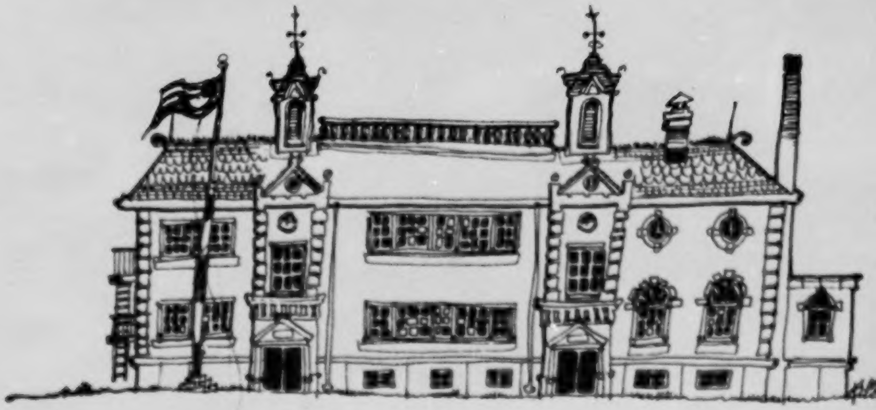
Until three or four years ago, the motivation for modernization was really maintenance; the motivation now is upgrading the environment and remodeling space for change in the educational program, plus phasing out buildings that have outlasted their usefulness.

School administrators and their boards are looking upon this new construction slow-down period as the opportunity to take a long look at what they have in physical plant. In some instances, replacement or abandonment is indicated, in others creative upgrading, often with some additional new construction, is the solution. The successful examples are part of an overall district plan. With proper planning, using the appropriate talent, upgrading of existing facilities can be rewarding and need not be as complicated as we were often led to believe in the past.

Generally speaking, here's what we have . . .



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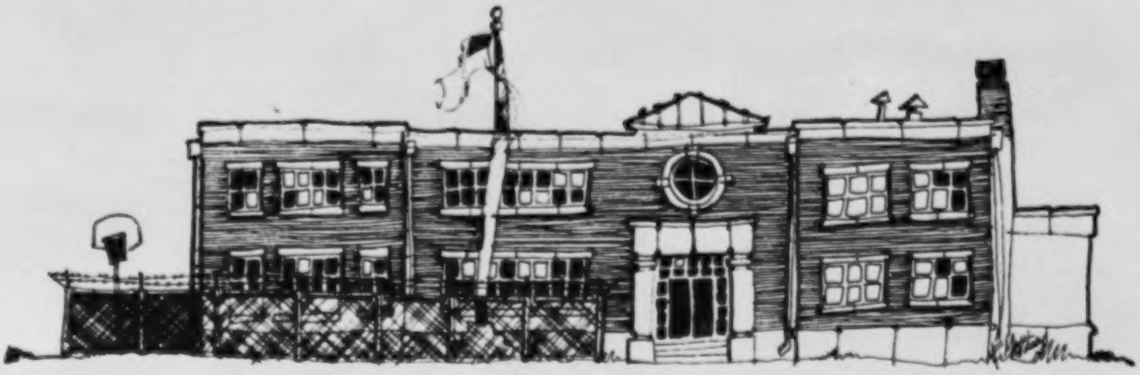

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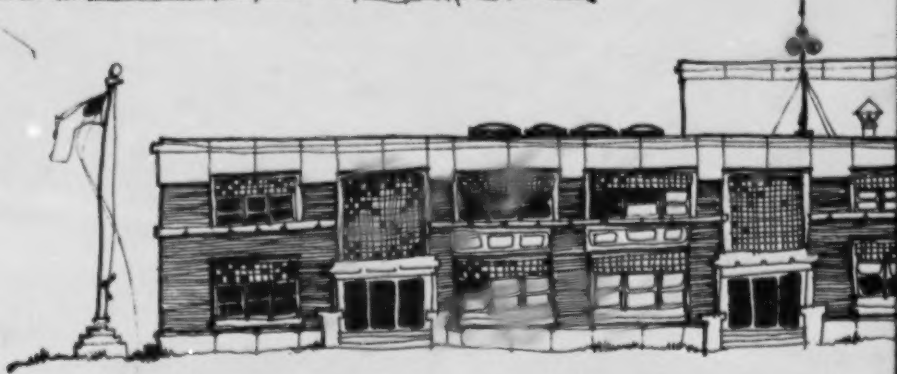
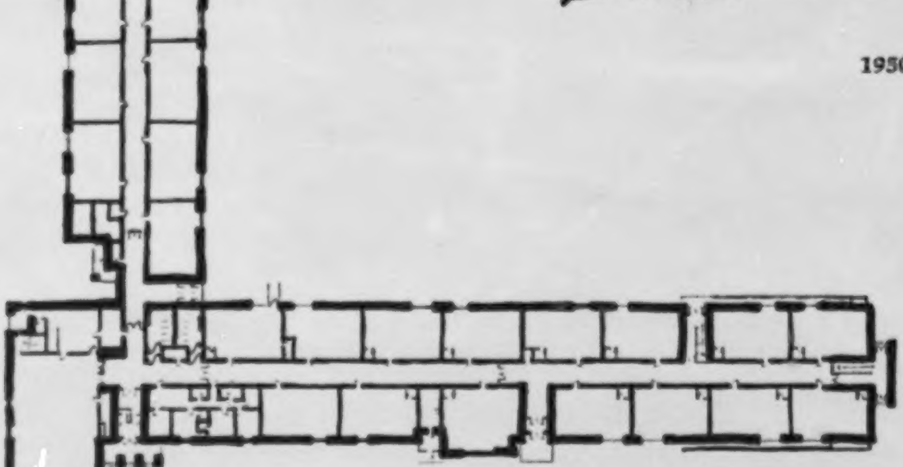


1950-60 box with glass block

Most have a variation of this floor plan . . .



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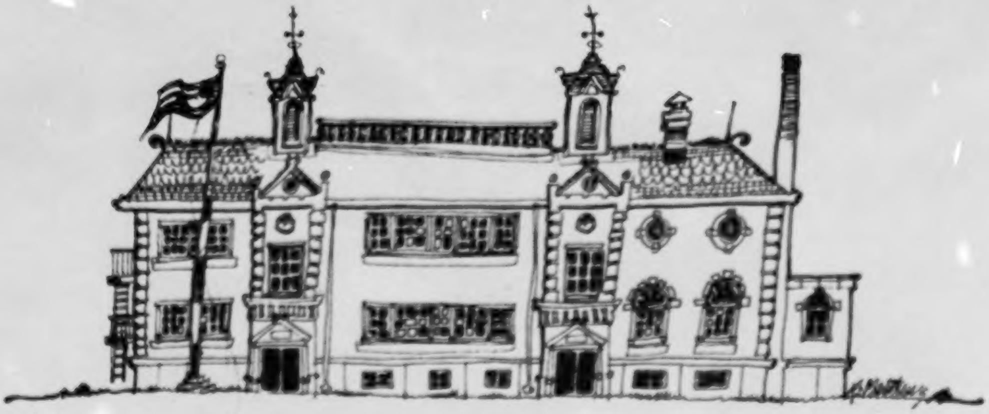

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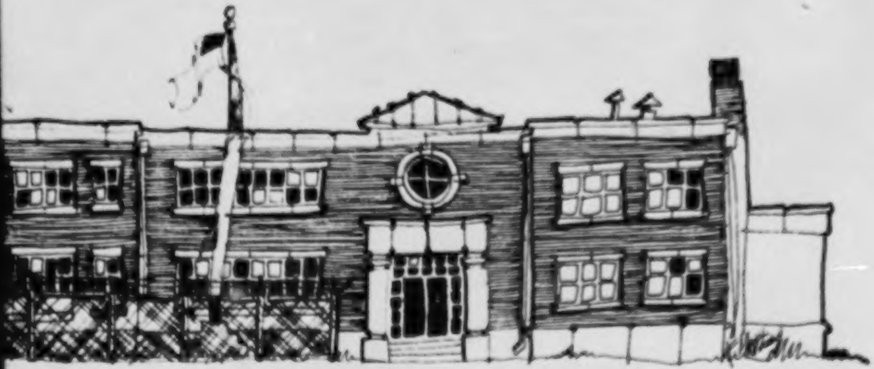

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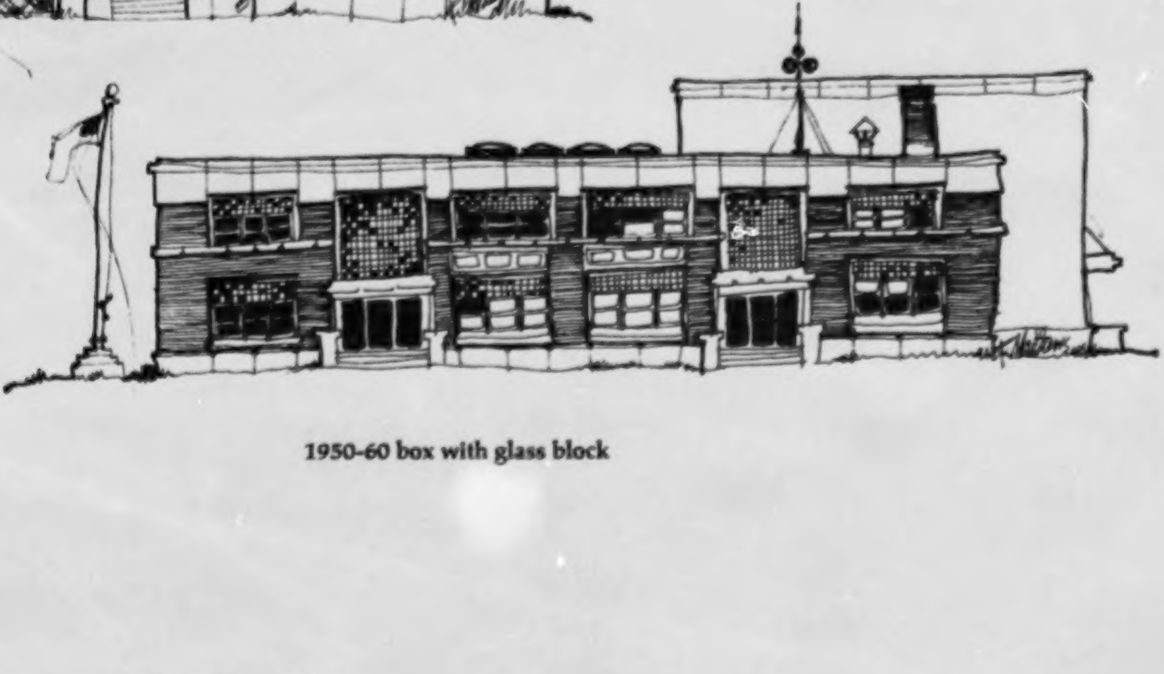

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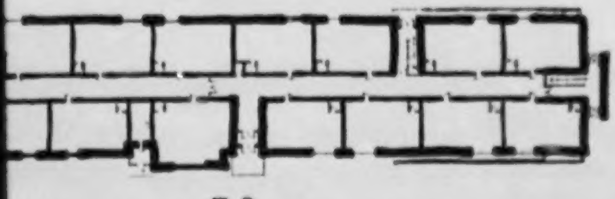

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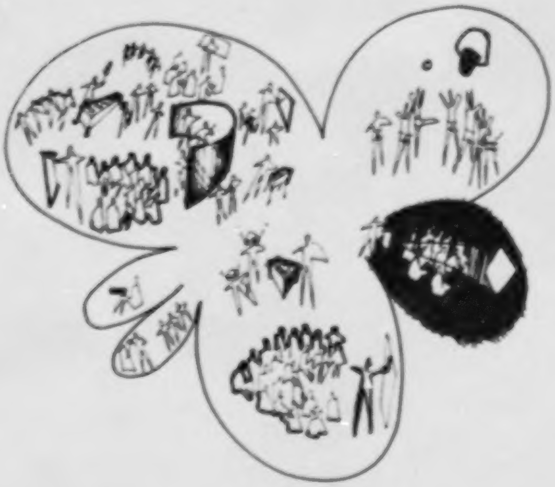
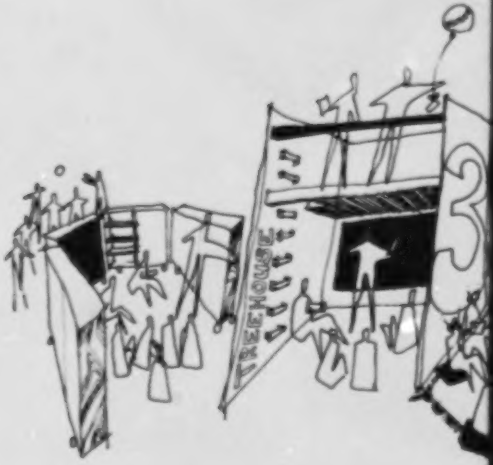
Faced with this, here's what's happening . . .

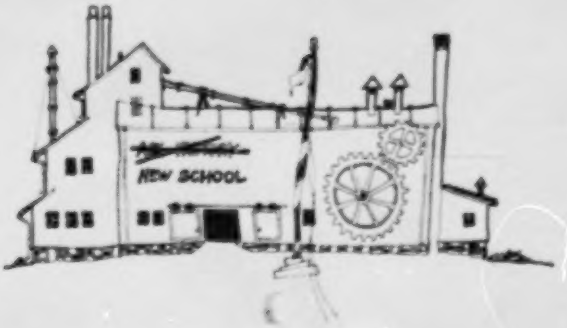
- Space is opening up.



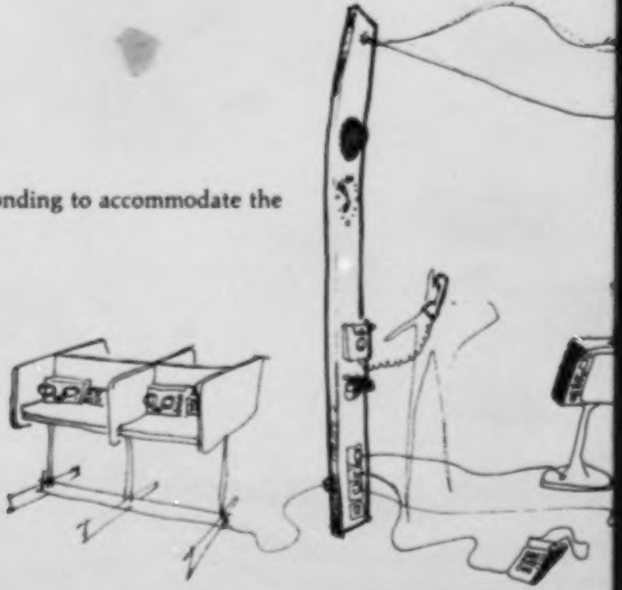
- Children are "wandering" and furniture is changing.



- Alternative schools are proliferating, often housed in "found space."



- Technology is responding to accommodate the changing space.



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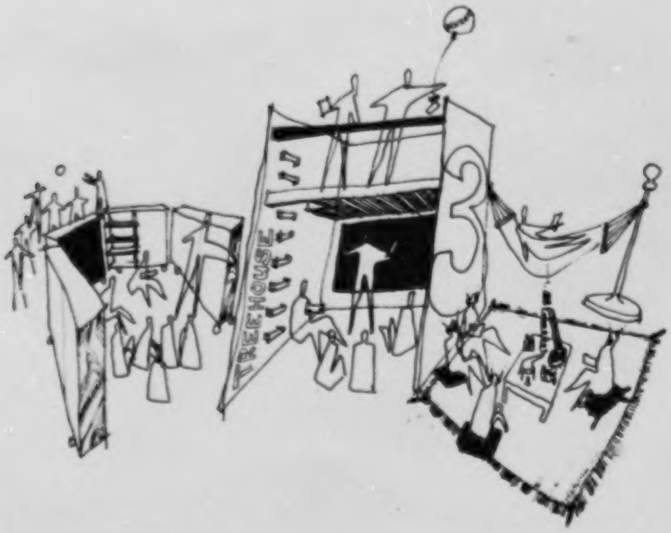
TREEHOUSE
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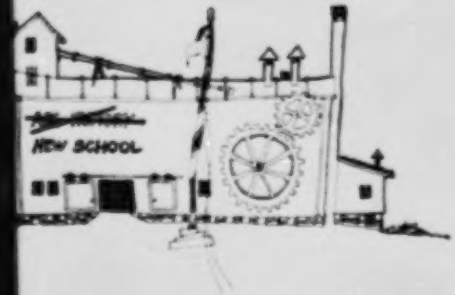

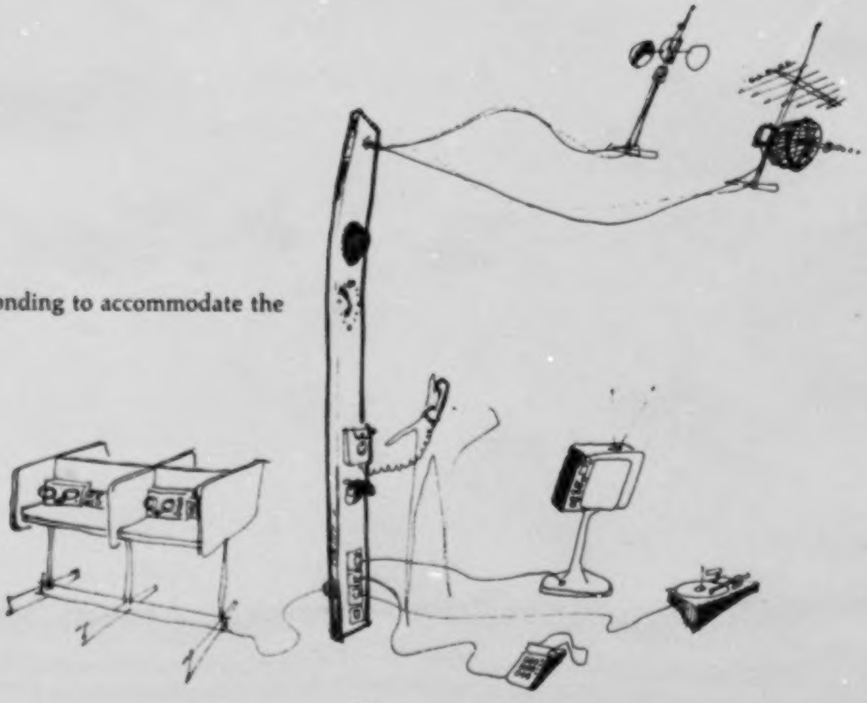

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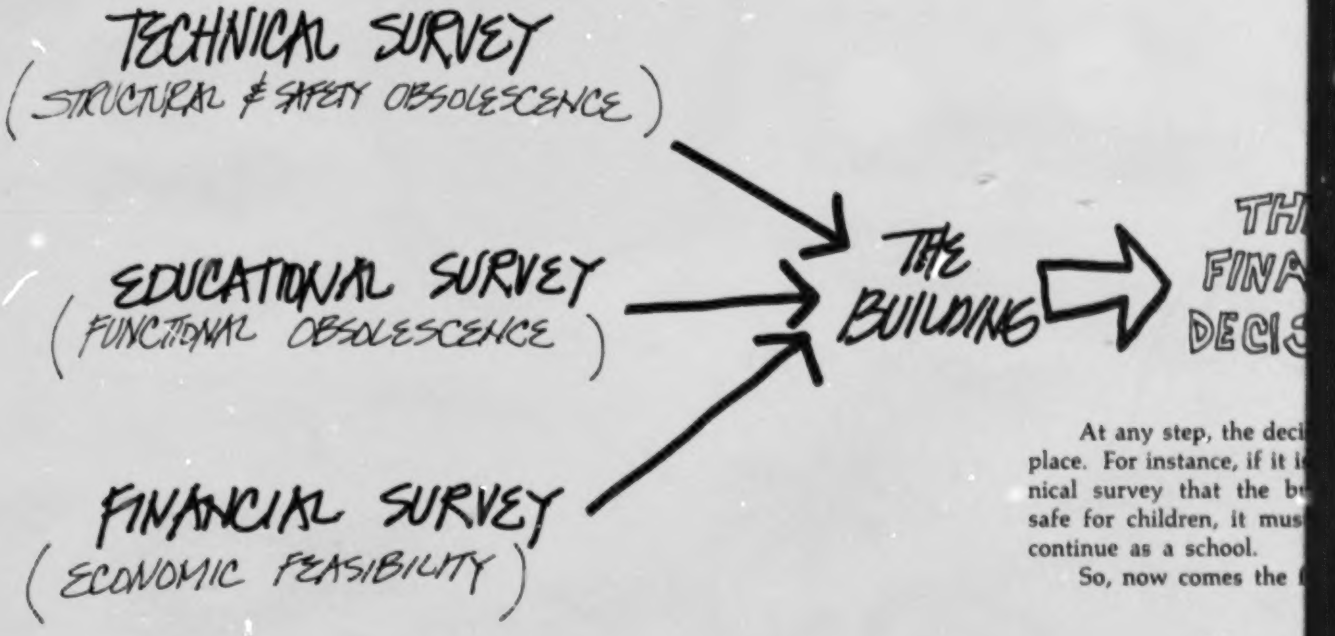
- Community groups are looking to the schools to house their programs.

So, once dissatisfaction is expressed with the existing facility, what should happen? A simplified systematic process would look something like this: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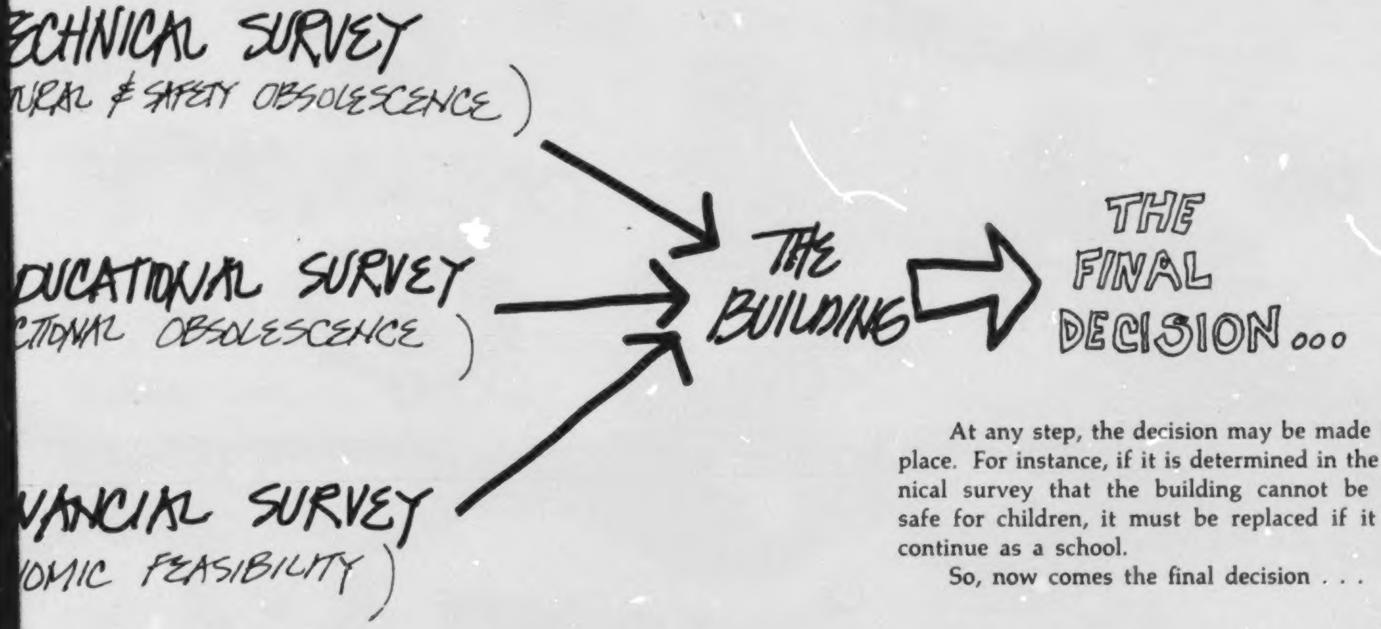
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THE FINAL DECISION...

At any step, the decision may be made to replace. For instance, if it is determined in the technical survey that the building cannot be made safe for children, it must be replaced if it is to continue as a school.

So, now comes the final decision . . .

Re-create or Replace?

The recommendation to the board and the community should consider the district's long-range plans, community sentiment and available funds.

Formulas in current use

A popular rule of thumb is that if the estimated cost of modernization is substantially more than 50 percent of the estimated cost of replacement, a long, hard look should be made before deciding to modernize. This is based on a projected additional life of 20 to 30 years. There is no set rule. One state department simply says that modernization should never exceed the estimate for new construction. Some states offer construction grants. Generally, they are somewhere around 50 percent of the total cost of the project as determined by the state. The emerging concept of full or part state financing of construction (Maryland, Illinois, West Virginia) as well as existing grant formulas neither encourage nor penalize modernization versus new construction. These grants vary but must be considered when studying the full financial picture.

Another word about the survey of existing facilities. In a report on the West Hartford, Connecticut schools, architects McLeod, Ferrara and Ensign point out that such surveys require experienced professional evaluators to:

- "Determine conformance with safety and building codes.
- Look for signs of deterioration in the structural, mechanical and electrical systems.
- Check the accuracy of existing plans.
- Evaluate the functional use of existing spaces and their adaptability.
- Assess the environmental aesthetics of the building.
- Study site usage and adequacy.
- Learn of complaints first-hand by interviews with staff and custodians.
- Collect data for future cost estimates.
- Check neighborhood characteristics."[1]

Evaluation forms are often employed and can be helpful but should be used as a guide with a team of educators, architects, engineers and maintenance personnel.

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[1] McLeod, Ferrara and Ensign. *School Renewal*. New York: Educational Facilities Laboratories, 1974. p. 13.

Cost data

Know these financial fa
final decision:

- Estimated cost of mode
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- Estimated cost of mode
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- Collect data for future cost estimates.
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Evaluation forms are often employed and can be helpful but should be used as a guide with a team of educators, architects, engineers and maintenance personnel.

Cost data

Know these financial facts before making the final decision:

- Estimated cost of modernization of the existing building with a minimum of new construction.
- Estimated cost of modernization of the existing building including all necessary additions to *completely* accommodate the desired program and student capacity.
- Estimated cost of replacement of the existing structure to completely accommodate the desired program and stated capacity, including costs of demolition of the existing building and new site development.

Remember in all three estimates to add the cost of busing or temporary facilities during construction.

Get the true financial picture. Even with the best of preliminary surveys, it should not be assumed that all possible costs have been considered. Unforeseen conditions should be anticipated by an adequate contingency factor in the budget; a 10 to 15 percent allowance, based on actual experience, is not unreasonable.

How about annual costs? The basic question is *not* the age of the building. The pertinent question is what will it cost to keep the building in service and what will it cost to replace it.

Rather than just considering the initial costs of new or remodeled construction, a replacement economy study compares the equivalent annual costs over the prospective life of a new building against the annual costs connected with retaining and renovating an existing building over its expected economic life.

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[1] McLeod, Ferrara and Ensign. *School Renewal.* New York: Educational Facilities Laboratories, 1974. p. 13.

Making decisions

The survey of an existing building does not have to be either expensive or terribly time-consuming. An experienced team can sometimes conclude, after a walk-through inspection, if it's feasible to consider modernization. A school district unsure about the feasibility of modernizing a particular building need not commit itself at the beginning to a full-service study without some assurance that the renewal route is possible. A comparative analysis is particularly valid when a school system is making an overall appraisal of all its facilities, and such comparisons can be used to explain the long-range consequences of proposed actions.

Energy consumption in the existing building should be carefully analyzed to identify sources of waste. William Tao, PE, consulting engineer, reminds us that in general, building heating and air-conditioning systems are responsible for 20 percent of total national energy consumption, but this could be reduced by as much as 30 percent.[2] Improved insulation techniques, thermal energy storage for cooling and heating, waste heat recovery, and task lighting rather than uniform general lighting can significantly reduce the total energy requirements of an existing building. For a more complete discussion of energy considerations, see pages 23-31, and Educational Facilities Laboratories' report, *The Economy of Energy Conservation in Educational Facilities.*

Generally, most buildings being considered for modernization have double-loaded corridors. The self-contained classrooms are relatively long and shallow, designed for natural illumination and ventilation. When this space is opened up or in some cases subdivided further for offices, air-conditioning and higher lighting levels will probably become necessary.

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[2] **Unpublished paper delivered at a national conference on modernization.**

A quick look at what to expect when you look at your schools . . .

Time of construction	Probable type of structure	Modernizati
Prior to 1900	**All timber or timber and masonry bearing walls**	**Limited poss restrictions**
1900 - 1920	**Masonry bearing walls; cast-iron columns; built-up steel girders; brick cinder concrete or flat tile floor arches; massive stone and brick foundation walls and footings.**	**Limited stru upgrading f meet codes**
1920 - present	**Rolled steel beams; girders and columns; concrete floors slabs; masonry bearing walls; bar joist systems; all-reinforced concrete framing systems; reinforced concrete foundation walls and footings.**	**Extensive re Structural r simple in th system. Fire probably ad**

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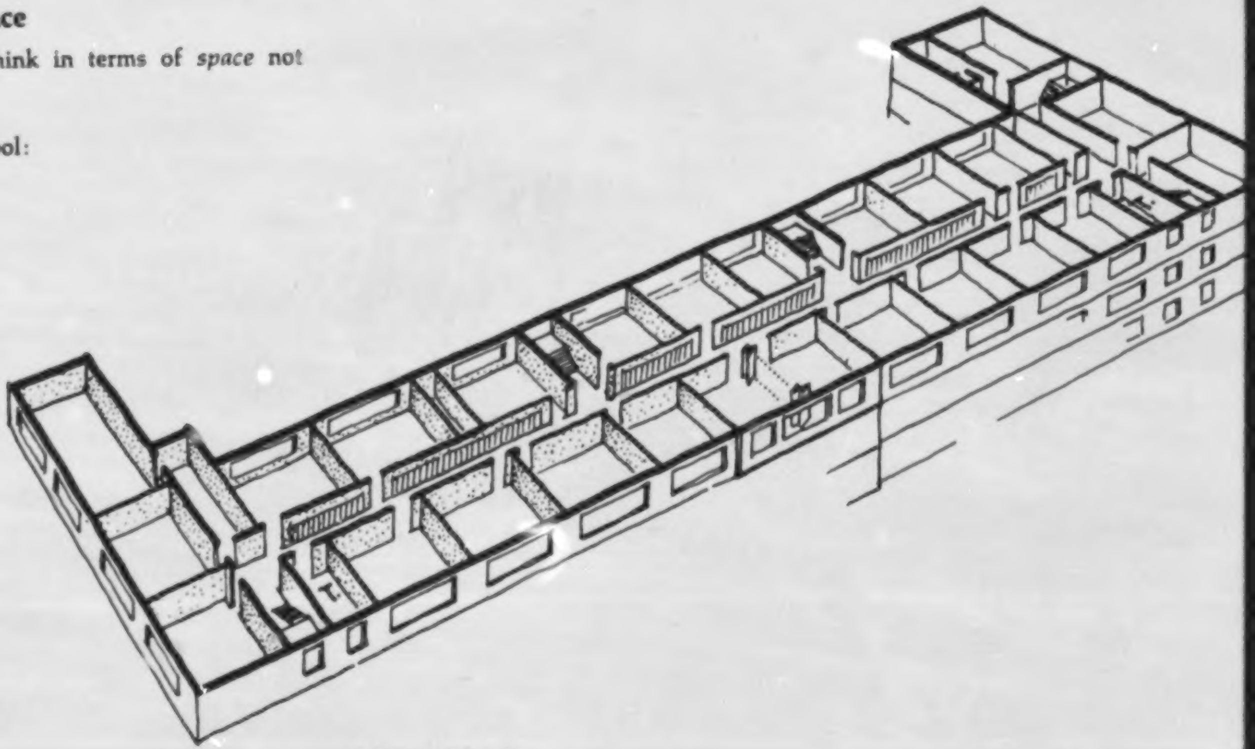
ered at a national conference

A quick look at what to expect when you look at your schools . . .

Time of construction	Probable type of structure	Modernization possibilities
Prior to 1900	All timber or timber and masonry bearing walls	Limited possibilities—code restrictions will be prime concern.
1900 - 1920	Masonry bearing walls; cast-iron columns; built-up steel girders; brick cinder concrete or flat tile floor arches; massive stone and brick foundation walls and footings.	Limited structural remodeling; upgrading fire-resistive ratings to meet codes could be costly.
1920 - present	Rolled steel beams; girders and columns; concrete floors slabs; masonry bearing walls; bar joist systems; all-reinforced concrete framing systems; reinforced concrete foundation walls and footings.	Extensive remodeling is feasible. Structural remodeling relatively simple in the all-reinforced concrete system. Fire-resistive ratings probably adequate.

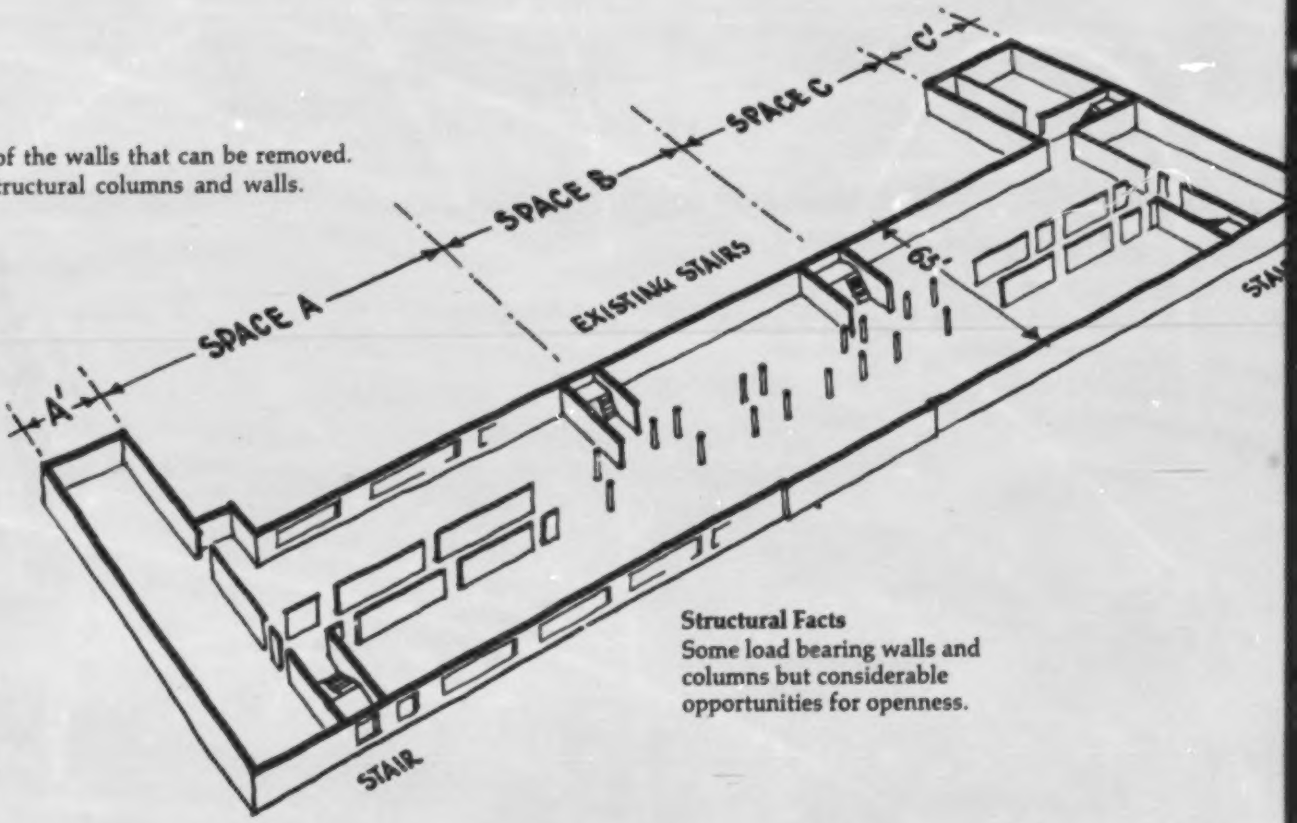
How to look at space

The key is to think in terms of *space* not *spaces.*
Example:
Here's an existing school:



Existing School
Classroom boxes along a long corridor.

Here are all of the walls that can be removed. What's left are structural columns and walls.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Structural Facts
Some load bearing walls and columns but considerable opportunities for openness.

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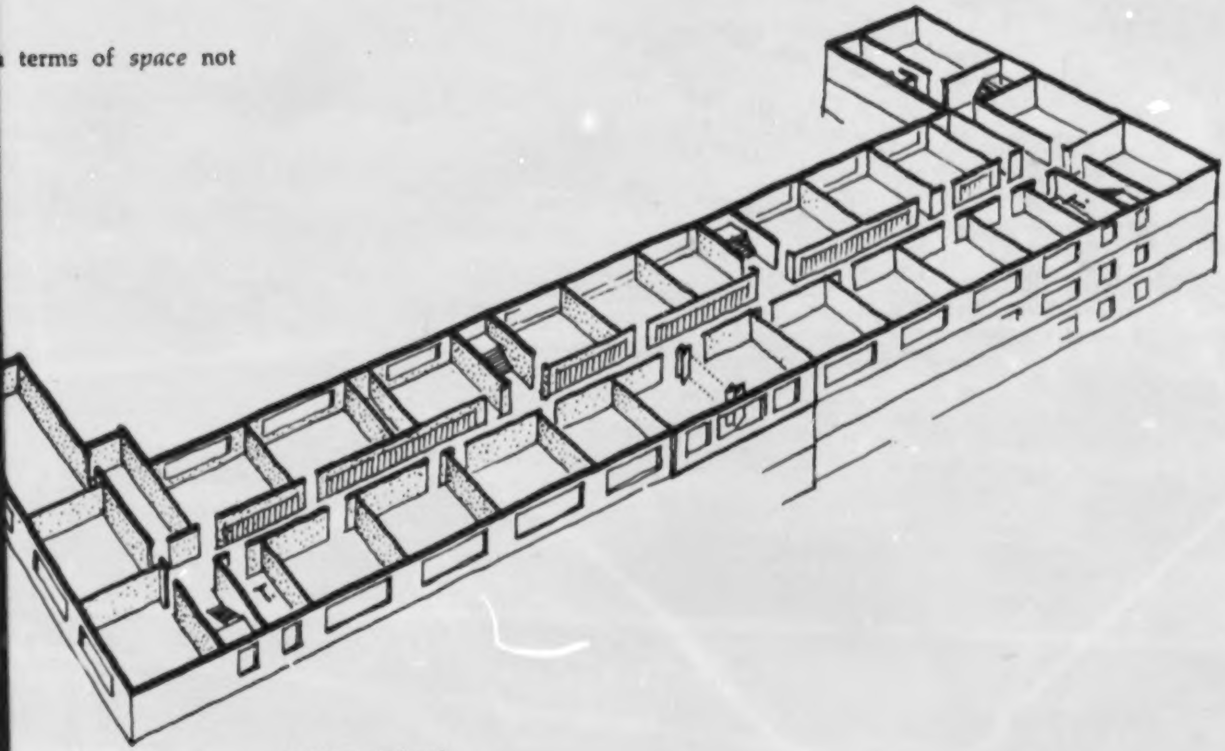

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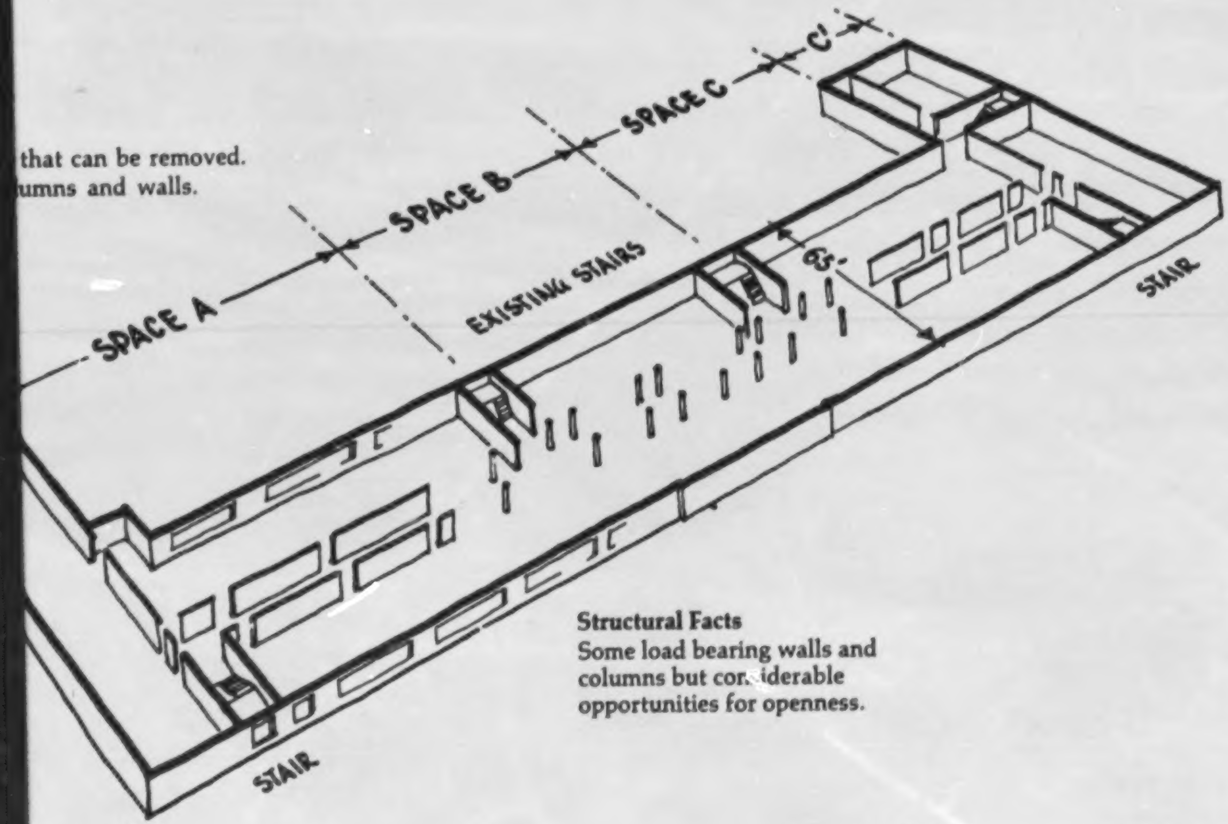
SPACE A
SPACE B
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C'
EXISTING STAIRS
63'-
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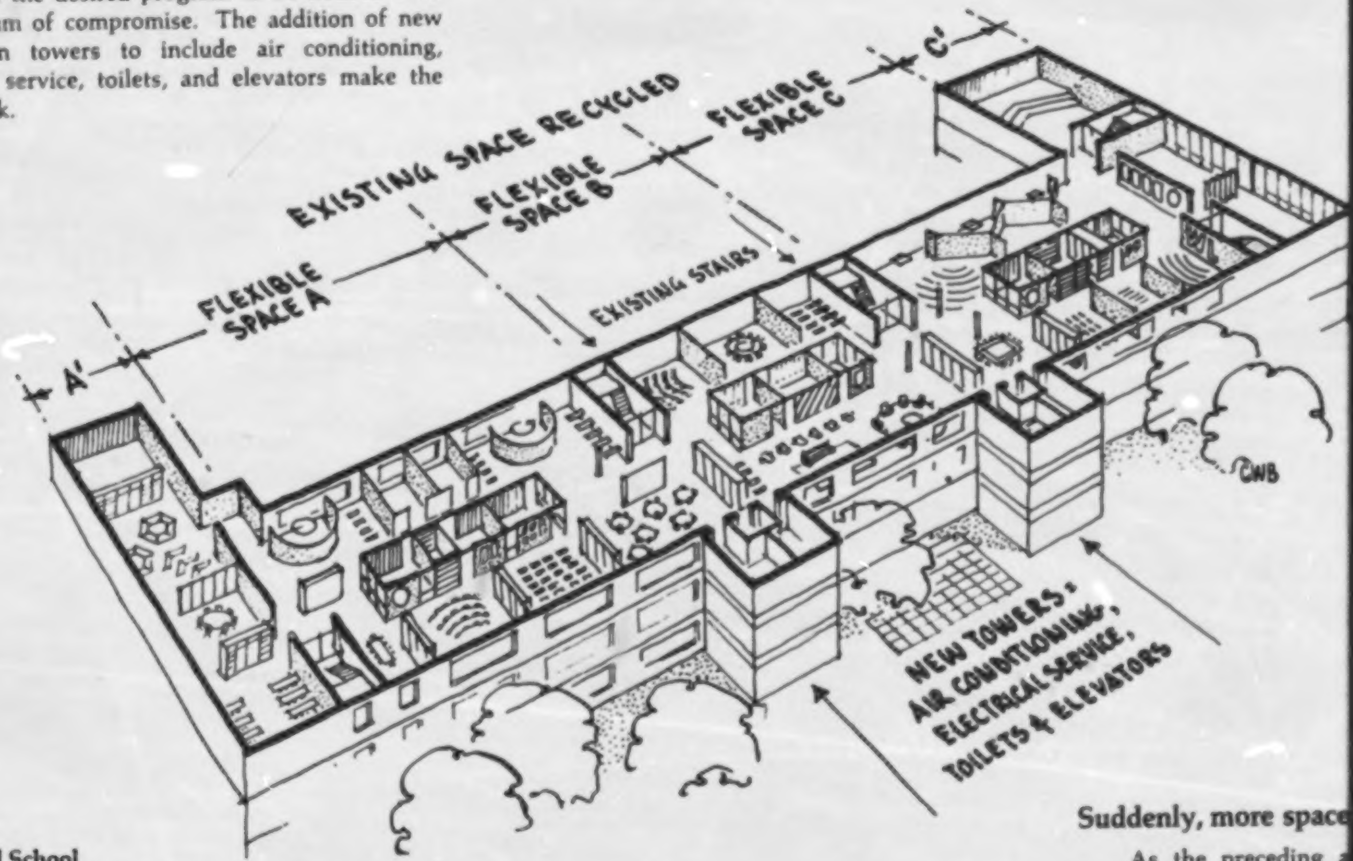
STAIR

Structural Facts
Some load bearing walls and columns but considerable opportunities for openness.

The considerable opportunities for openness permitted the desired program to be housed with a minimum of compromise. The addition of new circulation towers to include air conditioning, electrical service, toilets, and elevators make the plan work.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A'
FLEXIBLE SPACE A
FLEXIBLE SPACE B
FLEXIBLE SPACE C
C'
EXISTING STAIRS
NEW TOWERS: AIR CONDITIONING, ELECTRICAL SERVICE, TOILETS & ELEVATORS
GWB

Recycled School
Flexible spaces to accomodate changing programs.

Suddenly, more space

As the preceding a
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As walls in existing
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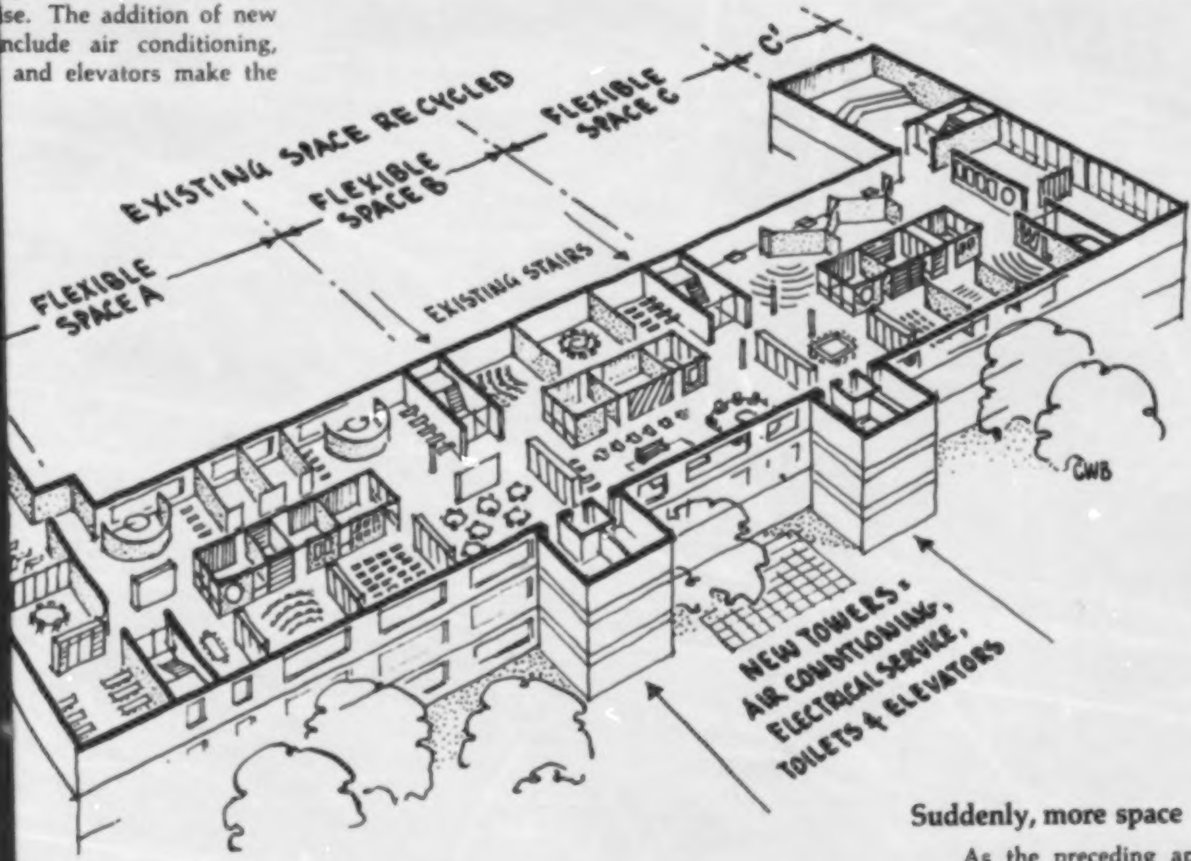
EXISTING SPACE RECYCLED
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FLEXIBLE SPACE B
FLEXIBLE SPACE C
C'
EXISTING STAIRS
NEW TOWERS: AIR CONDITIONING, ELECTRICAL SERVICE, TOILETS & ELEVATORS
CWB

late

Suddenly, more space

As the preceding approach indicates, opening self-contained space is a part of many modernizations. Breaking out of the restrictive, self-contained box usually adds more space. Corridors are now usable and space between classrooms flows where walls once stood.

In one example, the architects estimated the percentage of net usable instructional space in an elementary school ran from a gross of 64 to 76 percent after renovation. The difference between total gross floor area and net usable instructional space is the space occupied by corridors, interior walls, toilets and plumbing, mechanical and general storage space. Without corridors and walls, open plan schools have shown net to gross ratios of 80 percent or more. This is compared to 60 percent gross floor area used for educational space in conventional buildings.

As walls in existing buildings disappear, more space will result. It can't be said that it will always be 14 percent or so more of net usable instructional space. Often some walls and columns have to remain. But a substantial increase of space for learning will be available if your program calls for tearing down interior walls to accommodate an open concept.

Districtwide modernization

More and more modernization programs include more than one building, indeed, the entire system. This is becoming more the rule as districts have "surplus" space to consider. Looking at all facilities in a district will, in all probability, increase with the growing trend to state-controlled facility budgets.

The fact remains that most districts will be approaching modernization on a limited and continuous scale. Where budgets are tight, it's possible to upgrade existing facilities on a little-at-a-time basis. But, as has been pointed out, it is important to have a long-range plan with each stage fitting into the desired final result.

The Glenview, Illinois schools are good examples of this approach. To assure coordination, the district retains an architect on a services-billed for time-spent basis. The archit
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VANDALISM

The modernization of an existing building is an excellent time to evaluate possible approaches to decrease or discourage vandalism. If the building is an old, forbidding structure that is run-down, an exterior face-lifting is definitely in order. One west coast administrator says that any modernization program is foolish that ignores the exterior of the building.

There are no simplistic formulae for stopping vandalism, but here are a few things that have helped, taken from school districts in all parts of the country:

- Upgrade the exterior: repair walkways and steps; use a minimum of fences and "don't" signs, letting landscaping, seating and other friendly barriers direct traffic lanes.
- Enlist the community, including pupils, in landscape plans. A person hesitates to destroy something that person helped create.
- Extend school hours by including community use. That "surplus" space can be worth more than you think as a vandalism deterrent if you make it available to community and civic groups. An active building discourages vandalism. One district has turned two classrooms into a satellite police post. Result: vandalism down; pupil/police communication up.
- Consider re-orienting the entrance. The community sometimes has grown away from the front door. Face the school toward the community with a well-defined front door.
- Eliminate hidden or dead-end corridors or passageways. Vandals do not like to be seen.
- Consider live-on-site custodians. A district in Florida has retired couples living on-site in mobile homes. The result: decreased vandalism. Parochial schools with on-site residents report minimum vandalism.
- Don't be too hesitant to rename a school. If the customers have changed, perhaps a wing or the playground—even the entire school—can be renamed to honor a more relevant hero.
- Make creative use of "vandalism funds." Encourage principals to let the students know that certain funds will be returned for use in the school in any way they vote if the monies are not needed for vandalism repairs.
- Above all, involve the community in the modernization plans. Let them know the school belongs to them. Chances are the response will be positive.

(See also American Association of School Administrators. *Vandalism*. Arlington, Virginia: the Association, 1976.)

Districtwide modernization

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The fact remains that most districts will be approaching modernization on a limited and continuous scale. Where budgets are tight, it's possible to upgrade existing facilities on a little-at-a-time basis. But, as has been pointed out, it is important to have a long-range plan with each stage fitting into the desired final result.

The Glenview, Illinois schools are good examples of this approach. To assure coordination, the district retains an architect on a services-billed for time-spent basis. The architect is part of the long-range planning team and is in a position to apply current "mini-projects" to the district's future goals. This minimizes the chance of something done this year becoming a design problem at a later date. All interior finishes and furnishings are coordinated by the architect. Often the architect will recommend that the project construction work be done by the district's buildings and grounds crew; other times it may be more appropriate to use outside contractors.

Many modernization jobs have included merely opening up space in areas of four to six classrooms. Dubbed "mini-modernizations," the Glenview approach makes sense. The community and faculty find them understandable. Changes are made as a reaction to desire on the part of teachers and community. Bond issues are not required. And, probably just as important, alternative approaches can be tested and compared.

One district discovered how to "try things on for size" before making a commitment to final plans. Where the architects economic surveys indicated modernization would be less costly than new construction, the Frontier School Corporation in Chalmers, Indiana, decided to take the opportunity to test open plan, furniture and equipment, including large space in the existing building. Carpeting was rented and furniture borrowed for freight charges only. Staff, pupils, interested parents and the architects evaluated the temporary space and used the experiment as a guide for the final modernization plans.

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Washington, D.C. public schools are faced with the desire to move to a more open space school concept but economics dictate a slow process in opening all of their "egg-crate" buildings. To help minimize the opportunity offered by newer schools planned for innovative programs as contrasted with existing older, closed classroom schools, the planning department prepared a booklet of ideas, *Enclosed Open Space*. It's presented in the spirit of the "what to do until the doctor arrives" home medical dictionaries. Some of the areas covered include: walls, color, graphics, floor, furnishings, cardboard furniture and arrangements. The report is aimed directly to the principal and teacher faced with the problem of how economically to make a traditional classroom (or series of classrooms) function in a more open way. It is noted that an average room is approximately 700 square feet, with high ceilings, and one or two window walls for natural lighting. The remaining two walls are usually fitted with chalk and tack boards. The report then, with a minimum of copy and a maximum of sketches, offers suggestions for minor changes that can make a big difference, keeping in mind "limited expenses and the hope that most of whatever improvements are made can be incorporated into a greater scheme if and when modernization does occur." [3]

Some of the ideas:

- Walls painted a light bright color will help provide a lively atmosphere.
- Graphics (stripes, patterns, woods) may be painted or pasted on walls as instructional tools or as decoration.
- Different materials can be pasted on bare floors for instruction and fun.
- Where a floor is carpeted, give the children small boards of hard plastic for writing and drawing surfaces.
- Because the children in an open classroom will not be assigned a desk individually, tote-bags make excellent storage; buy them or use decorated shoe boxes, milk crates, drawers.

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[3] Washington, D.C. Public Schools. *Enclosed Open Space*. Washington: the Public Schools, 1972. p. 12.

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Perhaps the most helpful section is devoted to suggested room arrangements. It is recognized that the same freedom of movement provided by a "no-walls" school is not possible. The suggestion is to develop the "egg-crate" rooms by subject or interest area and permit children to move freely among them. The most significant statement points out that the ideas in the booklet are stop-gap measures of what can be done until help arrives.[4]

Many school districts realize that the best way to get started is to do something. With a set of eventual goals, updated as necessary, it's possible to make modernization a continuing project. And that's as it should be.

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[4] Ibid., the total report.

What to do with the occupants

At a conference not long ago, a superintendent related how his architect had suggested the modernization project could be a "learning experience" for the study body. What an opportunity to see first-hand, day-by-day how a building is put together, to actively see the subsystems! The superintendent allowed as how it was indeed, a learning experience; but he added, so was World War II and he certainly wouldn't want to go through that again.

One of the unanswered questions is what to do with the students while a modernization project is underway. There seems to be no one answer to what, admittedly, can be a big problem.

A contractor will tell you that if the building is not to be vacated, he generally will take this into consideration and, using past experiences, increase his bid to take care of additional insurance, thefts, slow-downs required when working around occupants, and so on. The best idea, then, is to empty the building. Sometimes, a district has the luxury of an extra school facility which, before it is phased out, can be used to house the entire school needing a home. Even if this is located a distance from the home area, teachers and parents will usually prefer this arrangement when the advisability is explained. By proper construction scheduling, the time away from the home school can be kept to a minimum.

Other districts have rented space in shopping centers, churches, warehouses or offices for the remodeling period. This is no great task for an elementary school, but the large high school, with its space and equipment demands, presents more of a challenge.

At the present time, at least one district with a projected multischool program in the planning stages, is looking at the feasibility of using an air-supported structure as the "surge space" during the program. After the program, the dome could be used as a community physical education facility.

If it is impossible to vacate the building during the construction, it is essential that the work be carefully phased for a minimum of interruption to the educational program and a maximum of freedom to the contractor. For multistory projects,

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it is phased out, can be used to house the entire school needing a home. Even if this is located a distance from the home area, teachers and parents will usually prefer this arrangement when the advisability is explained. By proper construction scheduling, the time away from the home school can be kept to a minimum.

Other districts have rented space in shopping centers, churches, warehouses or offices for the remodeling period. This is no great task for an elementary school, but the large high school, with its space and equipment demands, presents more of a challenge.

At the present time, at least one district with a projected multischool program in the planning stages, is looking at the feasibility of using an air-supported structure as the "surge space" during the program. After the program, the dome could be used as a community physical education facility.

If it is impossible to vacate the building during the construction, it is essential that the work be carefully phased for a minimum of interruption to the educational program and a maximum of freedom to the contractor. For multistory projects, vacating sections of the building vertically is preferred to permit a natural following of the structure and utilities and an ease of moving construction materials.

If an addition is part of the program, it should be completed first, if practical, and utilized as fully as possible to permit the vacating of the existing facility.

No matter what arrangements are made, remember that most construction schedules have a way of going beyond the estimate. Be prepared for some inconvenience. Enlist the help of all involved to keep complaints to a minimum. Unnecessary complaining will only aggravate the problem.

Excess real estate

Closely related to districtwide modernization programs is the question of what to do with excess buildings. The term *excess* is seldom used by school people who prefer *underutilized facilities* to describe the situation. But the fact is that while some districts are still pressed for space, others are faced with an enrollment decline.

Newton, Massachusetts has a study under way to stimulate the implications of closing one school as opposed to another. Arlington, Virginia schools have "retired" several buildings which are now used as community centers, senior citizen headquarters, social service centers, and the like. Kalamazoo, Michigan is considering the possibility of converting the old Central High School to a community/school and special education center. In nearby Lansing, Michigan the former downtown high school is now part of the Lansing Community College. In Newark, Ohio some central city, underutilized buildings are being studied as possible community enrichment centers to encourage residents to stay in the core area.

In some instances, but these are rare, the building has been razed and the property made available for private development. In large cities the no-longer-needed real estate is often in an area where no real estate investment is being made by the private sector so the unfortunate alternative is the maintenance of an empty building. In those areas experiencing enrollment decline, the first reaction is usually one of relief that now class sizes can be decreased and programs, long only in the talk stage, introduced. But then the realization comes that the economics of maintaining underutilized facilities has to be faced.

A panel of experts, appearing at a recent AASA convention, discussed all of the options but warned the least desirable action is maintaining an empty building. Nothing is more depressing, one panelist pointed out, than a boarded-up building which deteriorates at a speedy rate, inviting vandalism and other negative reactions. As the empty classroom trend spreads, other solutions are emerging.

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Through the efforts of the advertising media, if for no other reason, we are quite aware that obsolescence starts the day we buy the new car, TV, refrigerator, and house, or open the new school building. We are prone to think of obsolescence as something that is happening to the building. "It is getting obsolete" in a familiar pronouncement. The building of course is standing still; *we* are moving beyond it.

Much of this obsolescence is real, some is fadism, and a portion is just a palate jaded by the constantly accelerating rate of change. The day before the new school building is finished it is the dream answer to all our problems (or should be). Six months and two new staff members later, it may be "old hat." That portion of obsolescence which is real, such as an inefficient heating/cooling design, must be accepted as the price for progress. The fadism or change for change's sake is something we should examine very carefully. Before accepting a costly new technique, material, or whatever, it should be diligently reviewed. Is it better or just different?

In the present era of belated concern for wasted material, energy and other resources, this attitude is particularly appropriate. Changes always cost something and a substantial change for superficial reasons is most certainly exorbitant at any cost. We cannot ever afford to pass by real advances, but the "side trips" should be eschewed.

Excluded from the above over-simplifications, should be the imaginative rearrangement of movable elements and color and graphics which help us through the tedium of daily routines. If everyone attained the icy remoteness and the concentration of the ascetic monks of old, we might even dispense with this. But conditioned as we are to constant change, we must pamper ourselves to some degree and be sensitive to students' reactions to the environment. These changes, however, should be kept to "cosmetics" when the change is a variation rather than an advance.

School building obsolescence

School buildings are called obsolete for a number of reasons. Some of the most common are the "toos"—too old, too small, too large, too far from the new center of population, too expensive to maintain, too hard to heat, too hot and too inflexible to meet the needs of new teaching techniques.

Some of the "not enoughs" are not enough electric outlets to accommodate the proliferating electronic teaching aids, not enough wet work areas, school corridors not wide enough to avoid generating tensions in today's more contentious atmosphere, and the granddaddy of all not enoughs—not enough storage space.

SIGNS OF SPRING

More difficult to correct are malfunctions like perenially leaking roofs caused by deep-seated structural problems, cracking walls occasioned by settling foundations, partitions left hanging in the air by subterranean bound floor slabs. Frequently a bad choice of kinds of interior finishes poses constant and expensive maintenance costs.

Many of the older schools were designed without much consideration for accommodating the custodial process. In some cases, the resultant inefficiency is a costly item and justly is considered a factor in the obsolescence index of the school.

The majority of these items fall within the category of correctable within reasonable means. The others are concerns of major cost and must be dealt with as specific problems.

Real or unreal?

Obsolescence is a relative term. Our objectivity in determining educational aims and the adequacy of the spaces to house the process is the quintessence of the problem.

Today's attitude of intolerance of even minor inadequacies sometimes leads to expensive rehabilitation where the resulting advantages are questionable in the light of their cost. On the other hand, familiarity makes it very difficult to see our own house clearly and sometimes the grossest inefficiencies and archaic conditions remain undisturbed.

The re-creation of educational space should be limited to providing an environment which comfortably hosts an educational process without defining the space too precisely for that particular program. The very nicety with which a space is developed for a specific activity contains the seed of its own obsolescence.

An amorphic, large, open space has obviously the slowest rate of obsolescence. Unfortunately, to create imaginative environments within such a large barren area requires more time, effort, imagination and space-design skill than most teachers have at their disposal. The problem, then, is one of supplying all basic supportive elements in a manner not constrictive of change in the educational program.

The open teaching space of our new schools is a long step toward avoiding obsolescence. Care should still be exercised though, so that the whims and idiosyncracies of an aesthetic design concern do not produce esoteric shapes and configerations that are today's delight and tomorrow's headache. A few minor changes, for instance, in floor elevations in an open space can be most desirable; carried too far, it becomes tedious and a teaching and housekeeping handicap.

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Sometimes a factor in assessing a school building as obsolete is primarily a matter of fatigue from looking at the same thing for too long. Then cosmetic renewal is indicated and it can be a fun process.

Some ways for this kind of re-creation are new bright colors and bold graphics, shifting of mobile equipment and elimination of some interior nonbearing walls. Simple enlargement of interior space is a sure cure for the doldrums. The cosmetic change is obviously to be done in the color and design idiom of the day. This kind of surface changing should be ongoing if the school is to remain vigorous. Since it can be done relatively inexpensively, it is a must if we are to avoid the "unreal" obsolescence syndrome.

The historic old building

When a sufficient amount of time passes (usually a hundred or more years) obsolescence becomes romantic and a building becomes historic. In the case of working schools this is rare, since with the exception of colleges there are few school buildings that qualify in the hundred-year category. Anything less old requires aesthetic value or at least architectural charm to be a valid contestant for the title.

HISTORIC PRESERVATION

Throughout America, interest in historic preservation is growing. We now recognize that many fine old buildings, rich in history, have been demolished often without second thought to make way for new development. Many old buildings had thick masonry walls that were sometimes textured and ornate, sometimes simple and bold. These structures were and are a part of our culture and history. In some instances, the new buildings that replace them were inferior in quality. We lost something valuable.

Now, many citizens—often influential citizens—look at our remaining historic structures with new interest, with an eye toward saving them, restoring them and finding new uses for them.

What about school buildings? Is historic preservation of old schools a growing factor? We think so.

Until very recently, there was little interest in the preservation of old school buildings for cultural reasons. New buildings meant "progress," and because old buildings were allowed to decline, new buildings were indeed more comfortable and more convenient. Where economics permitted, most everyone chose to replace the old with the new.

Now, rather suddenly, there is a new mood in America. We are more interested in our history, in the enterprises and accomplishments of past generations and in preserving part of the past for present and future enjoyment. We admire the great diversity and richness of old buildings.

In this book, the facts are illustrated that old school buildings can often be preserved, restored and adapted to new needs. Of course not all existing buildings are worthy of preservation, but some certainly are. When an old school is of good quality and handsome, when associations with it are pleasant, and when it has historic importance, then there is good reason to preserve, restore and reuse it.

Colleges have had many experiences in preserving their older buildings, not for practical reasons, but for cultural reasons. On many campuses, Old Main is an important landmark for the alumni. Old Main also serves important functions for current students and faculty. It provides a time scale, a reminder of the past, interesting variety for the campus, and useful space for contemporary activities. The 19th century buildings of our colleges and universities, with their richly textured heavy masonry walls, fine scale and detail, are excellent neighbors for smooth-walled modern buildings.

Just as people want to preserve some of the old college buildings, so will they more often want to preserve some of our fine old elementary and secondary school buildings. In some communities, these schools are among the oldest, most important, largest, and most interesting buildings in town. Many have historic significance.

School administrators now have an added motive for re-creating a school building —historic preservation—not as a museum, but as a structure restored and adapted for new uses.

Historic preservation is not easy. It demands skillful restoration of the exterior character of a building. Restoration should be historically accurate. This will require research by an interested architect to determine what elements are appropriate for restoration, and what elements (often added later without care) should be removed. Doors and windows, roofs and walls, and all of the details should be consistent with the original character of the old building. Exterior "modernization" is dangerous and usually undesirable. When historic preservation is a goal, one must resist the temptation to add elements, to change window patterns and door details, or to remove original parts of a building.

The job has to be done right. It may cost more than expedient remodeling, but the community may deem the effort to be worth it. Citizens have supported preservation of churches, college buildings, courthouses, commercial buildings, and historic residential areas. Schools may well be next.

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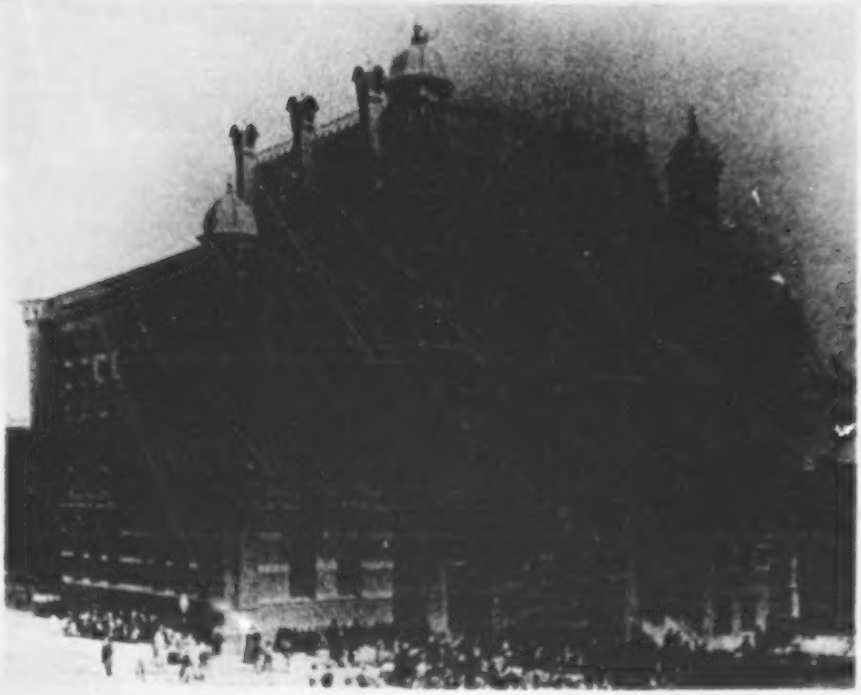

Franklin School, 1869
Washington, D.C.

Zalmon Richards, General S
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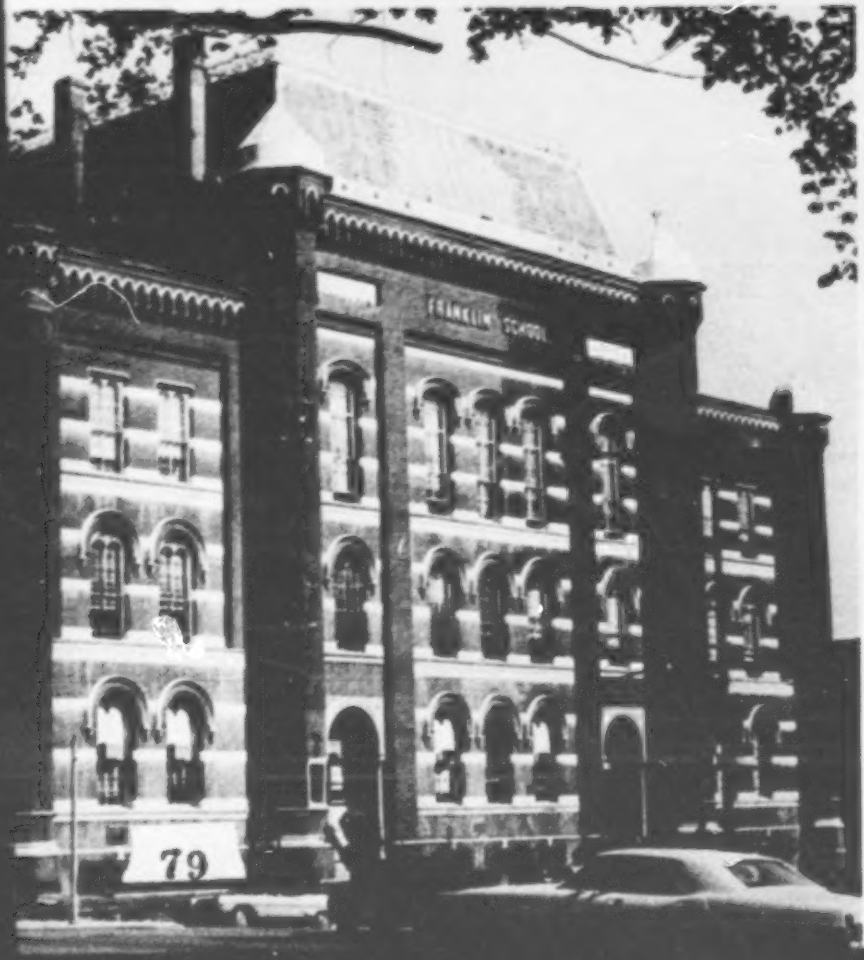

Franklin School, 1869
Washington, D.C.

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of Public Schools
Adolph Cluss, Architect

Franklin School in Washington, D.C. was completed in 1869 and won national and international recognition for its excellence. J. Ormond Wilson, trustee, was one of the prime forces in efforts to provide outstanding programs and facilities and to remove the stigma of "poverty schools" from free public education in the District. As superintendent of schools in 1873 he received the Medal for Progress for the City of Washington at the International Exihibition of 1873 in Vienna for "Progress in Education and in School Architecture."

Over the years, Franklin School introduced many new and experimental school programs such as industrial drawing, penmanship, map drawing, molding, composition, manual training, teacher training, high school programs, business education, speech correction, and lip reading. Beginning in 1925 and for many years it served as the administrative offices for the board of education; it now houses an adult education program.

The Franklin Committee, brought together by AASA in 1968, developed plans for rehabilitation of the school into a national arts and humanities education center. Although the necessary funds for the realization of this new use for the historic school were unavailable, the school has been placed on the National Register of Historic Places.

Funds were hard to come by even in its early construction stages. It was suggested then that perhaps the building be sold to the government since it was so imposing and more suitable as a "public building" than a mere school. Obstacles were overcome, however, and in his dedication speech Alderman Chase said:

> "We have been told that this is too fine a building for a public school, too much money invested in architectural beauty, etc. Ah, Sir, I hope the time may never come when we would make less beautiful and attractive the places where our children are to receive an education, where lasting impressions are to be made upon the young mind, than we would the offices of State."

Mechanical support systems

It is extremely difficult if not impossible to avoid obsolescence of mechanical support systems, but to some degree it is the same game—forego highly developed, sophisticated systems and try for wide-ranging, generous basic services with built-in ability to accept change. Although in this era of constraint one hesitates to recommend it, a generous basic energy supply is indicated to provide for future additional electronic teaching aids.

If obsolescence has a good connotation it might be in the thought that our present wasteful heating and lighting systems would soon be superseded by new, more efficient designs. Until that develops, however, we should strive to temper requests for an environment with a sophisticated control system permitting many individually controlled areas.

Mechanical systems are considered obsolete when:

- The same job can be done by a newer system at considerably less cost.
- Temperatures can be maintained with less variation.
- Newer elements of comfort are accepted as standard rather than plush, such as air-conditioning and humidity control.
- It cannot easily accept space changes.

Options for use of obsolete or "surplus" schools

Physical handicaps which render a building inadequate to house certain activities may not be disadvantageous if the building is put to other uses. Ideally one finds a use for "surplus" schools within the system. However, if this is impossible it should be made available, under some terms, to other public agencies.

An ideal would be a "public building bank" agency. When one community element can no longer use a building efficiently, it would be released to the building bank as a reserve unit for whatever purposes are deemed most appropriate. The artificial fences and proprietary attitudes of agency units within the community is extremely wasteful and expensive for the taxpayer. A common case in point is illustrated by the following.

A school district in a suburban area found it necessary to close one of its elementary schools. After the usual long hassle with the embattled parents, who managed to delay the closing for a year or so, the school was closed.

One of the component communities of the school district wanted a community building and successfully passed a bond issue to purchase the school from the school district. The school, which was located in this community X, was therefore paid for twice by the taxpayers of X, once to build it and again to buy it from themselves and the other members of the school district.

While it is true that the district patrons who lived outside of X also had an equity in the building, a more economical and effective disposition of the building might have been possible if the building had been ceded to a "public building bank" agency while retaining proprietary rights. (The school district might need the building in the future.) The agency could then have leased or loaned the building to community X for recreational purposes and required that it be available to all members of the school district.

Community X could then have had the building's use (while paying for maintenance) with the only limitation being that any alterations made would not preclude the retrieval of the building for educational purposes. This might also have had a good influence in restraining the officials of community X from over redevelopment of the structure as a community center.

Public/political parochialism is wasteful. A surprising amount of duplication, waste, and misuse of buildings might be avoided if all public buildings were truly *public* buildings. It is the same sort of anomaly the taxpaying citizen experiences when looking at a vast prairie or forest area fenced in, with a sign saying, "No trespassing—state property."

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Some "surplus" school potential usages are:

- Special programs like adult education, hobby center, practical arts center.
- Senior citizen educational programs with officials and faculty enlisted or augmented from the ranks of the retired community members.
- Housing for the elderly. Altering schools for older people seems like a reasonable transition since one of the most frequent reasons for a school becoming surplus is the aging of the residents in the neighborhood. (This alternative should be studied carefully because it may not provide the optimal housing pattern for the elderly. A common fallacy perpetuated in many facilities for the aged is the assumption that the elderly have such a broad community of interests that their grouping under one roof provides an ideal milieu for them. A broader housing mix may be a happier solution.)
- Other community service functions such as recreation, welfare, child care, job training, social and meeting activities.
- Renting or leasing schools or classrooms to

other educational entities. An illustration of this usage occurs in St. Louis County, Missouri. When the Special School District of St. Louis County was formed in 1957, it was given the task of educating the handicapped children of St. Louis County. This program has since been enlarged to include vocational-technical programs.

The district is now operating in 15 totally occupied school buildings:

9 of which they have built themselves

2 of which they bought from school districts

4 of which they are leasing from school districts.

In addition, they are leasing approximately 153 classrooms at about $1,500 per year per classroom. Exclusive of the vo-tech program, there are about 12,000 children in the program and about 1,000 professionals employed. Since the adaptation of a regular classroom for these purposes is relatively simple, the costs of the changes—usually carpeting and other furnishings—are borne by the host district.

Remedial treatment

For the mature school district which has neither surplus nor lack of space, this is obviously the golden opportunity to renew, rehabilitate, up-date, re-create its buildings. Renewal programs are very much the order of the day and permit the administration to rethink some of the space allocations which may no longer be valid.

When undertaken on a districtwide scale, a complete, thorough study of existing conditions must be undertaken. When the basic physio-educational profile of each school has been determined, ways must be found for using this information to compare the school with others in the system. Some of the forms used in this procedure follow.

If intelligently done, the rating list usually confirms what the superintendent already knows. In addition, however, it does give the administrative staff factual information to support its subsequent program for corrective measures. With this list and supportive information at hand, it is a simple matter to determine what each school needs to bring it up to the desired common level for the district.

One example of such an analysis and proposed program of equalization and renewal is illustrated in the recently completed Hazelwood, Missouri *School Renewal Program*. Established in the report are:

- Physical profile, site plans and building plans of each building in the system.
- A resume of what is required to bring each school up to the required common level.
- A time/money budget established with provisions for updating if the "calendar slips."
- Priorities set up so that the neediest schools get first remedial attention.

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Remedial treatment

For the mature school district which has neither surplus nor lack of space, this is obviously the golden opportunity to renew, rehabilitate, up-date, re-create its buildings. Renewal programs are very much the order of the day and permit the administration to rethink some of the space allocations which may no longer be valid.

When undertaken on a districtwide scale, a complete, thorough study of existing conditions must be undertaken. When the basic physio-educational profile of each school has been determined, ways must be found for using this information to compare the school with others in the system. Some of the forms used in this procedure follow.

If intelligently done, the rating list usually confirms what the superintendent already knows. In addition, however, it does give the administrative staff factual information to support its subsequent program for corrective measures. With this list and supportive information at hand, it is a simple matter to determine what each school needs to bring it up to the desired common level for the district.

One example of such an analysis and proposed program of equalization and renewal is illustrated in the recently completed Hazelwood, Missouri *School Renewal Program*. Established in the report are:

- Physical profile, site plans and building plans of each building in the system.
- A resume of what is required to bring each school up to the required common level.
- A time/money budget established with provisions for updating if the "calendar slips."
- Priorities set up so that the neediest schools get first remedial attention.

Sometimes smaller programs are undertaken within the district. Parkway, Missouri undertook such an effort after completing two new high schools when it found the original high school lacking significantly in certain facilities supplied at the new buildings. Since it was a very comprehensive renewal, the program was scheduled to be completed in four years. Areas of addition, redevelopment of spaces and departments, dollars available at given time, least disruptive schedule, and other elements of the problem were thoroughly studied by the team and the master plan for cash flow showing where, when, what and for how much was developed. New thoughts were incorporated as each segment was implemented which has kept the program lively and vigorous.

At a smaller scale, many districts find that revitalization of the school can be centered around the creation of a new learning resource center. One such example is the City of Ladue where the old gym, which was too small and in the center of the school mass after various additions, became a handsome LRC with balcony. A new gym and arts shop area was constructed on the periphery.

The Future

The Future

We have already experienced energy shortages and in the future can expect to encounter materials shortages. As the population grew, the most readily available resources were consumed. The easiest-to-get-at oil, gas, coal, iron, copper, aluminum and wood were consumed with little concern for conservation. Now we know that many of our resources are being depleted. Scarcity will mean higher prices. Higher prices will be a persuasive motive for conservation.

Urban planning and architecture will be profoundly influenced. The old habits of sprawl and waste will change. The throw-away society will be obsolete. We will find more imaginative ways to use the buildings, towns and cities, and infrastructures created by earlier generations. As a part of this new ethic of conservation, existing schools will be used more effectively.

It is not unreasonable to predict that many citizens will rediscover the advantages of living in the older towns, cities and suburbs where travel distances are shorter and where public transportation is both practical and available. This new interest in maintaining existing residential areas will affect school planning. As old residential areas are thought to be good places to live, the better old schools will be held in higher esteem, or citizens will want new and better schools in old neighborhoods.

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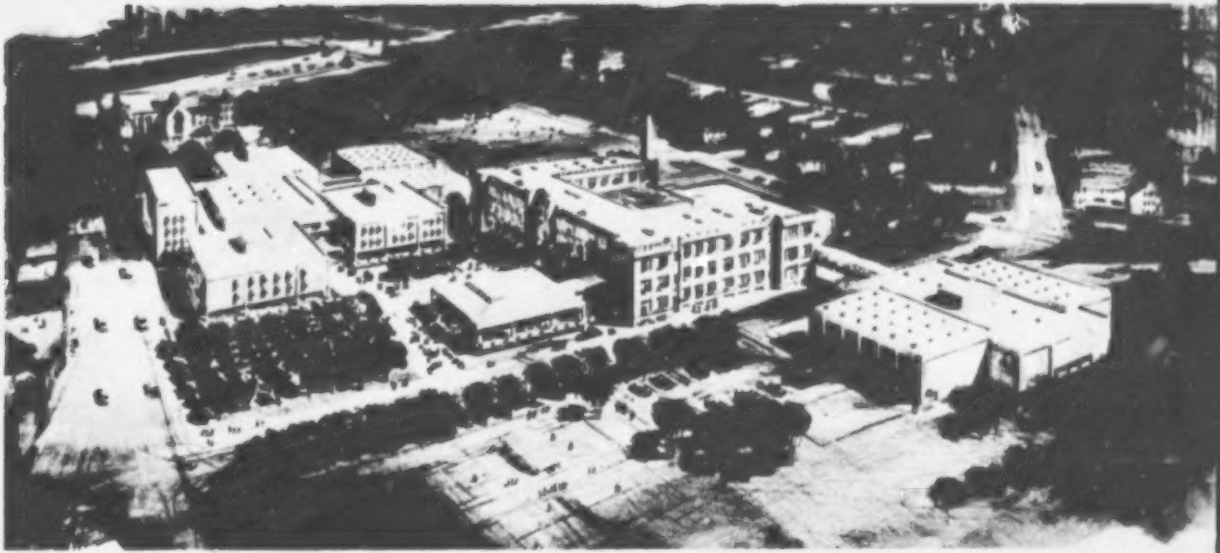

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This will be in sharp contrast to the experience of the post-World-War-II years when too many citizens with choice moved out to the new areas. The new and most interesting schools in those years were most often built in the new suburbs. Next, the pendulum of public favor will probably swing back to the energy-efficient compact town and city and established suburb. Existing schools will be ripe for re-creation.

New ideas will be a part of the scene in the old neighborhoods, however. The schools will more often be thought of as community centers—a trend that has been evolving for years.[1]

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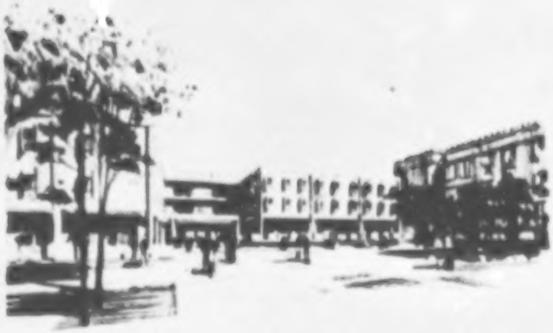
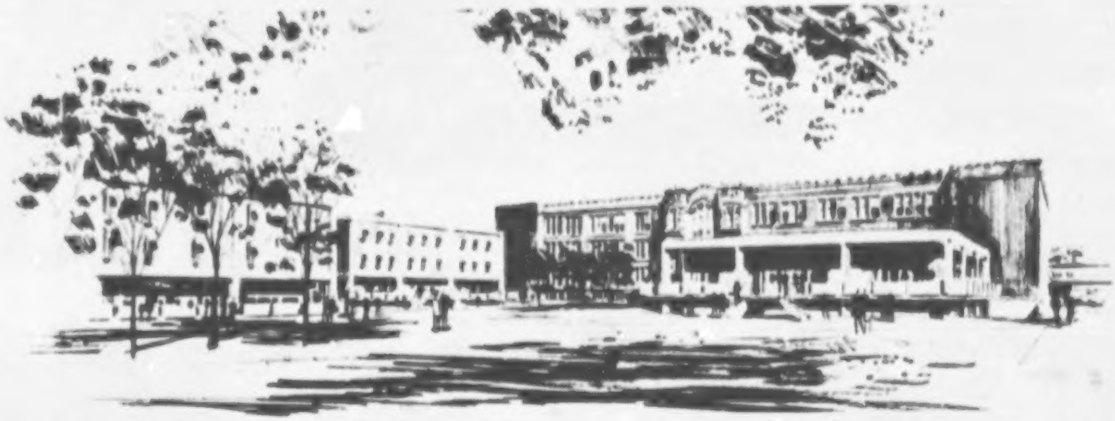
[1] See American Association of School Administrators. *New Forms for Community Education.* Arlington, Virginia: the Association, 1974.





For local neighborhood affairs, the elementary school is the logical focus. Its size and "market area" is such that both children and adults can walk or ride bicycles to it. For broader community affairs, requiring more extensive facilities, the high school is an appropriate meeting place. Middle schools, community colleges and other buildings can enrich that mix of community/school facilities.

Therefore, since the functions of school facilities will probably significantly expand, planning for new uses—for re-creation—will involve not only educators but other community planners. Park and library boards, health and welfare agencies, both youth and senior citizen groups and clubs, and local government planners (for traffic, utilities, security, zoning) will participate in guiding the future use of sites and buildings.

With many interests represented in planning a community, not just a series of isolated school buildings, it is apparent that the range of activities in a school will change. It will no longer be possible to evaluate space needs by the old enrollment projections alone (600 students @ 100 square feet per student = 60,000 square feet). Instead, space needs will be determined by a much more complex program of activities.

Communities may well
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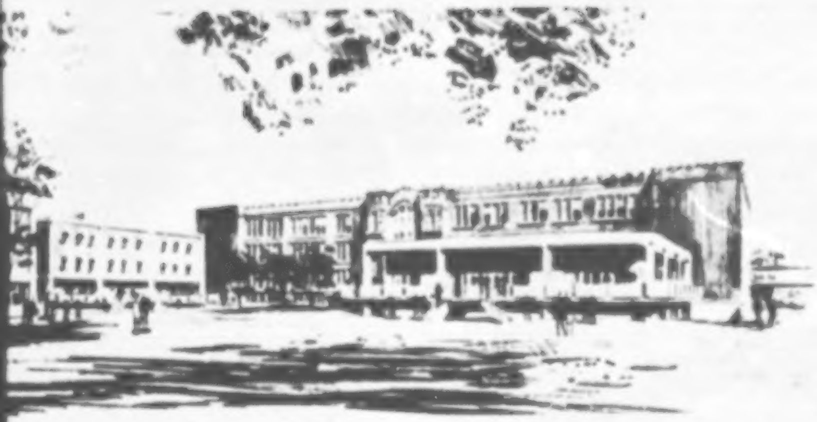
had was a shortage of ideas



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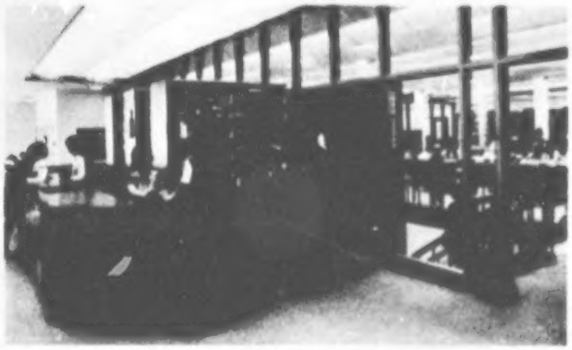
Communities may well find that they didn't have a "surplus" of space after all. What they had was a shortage of ideas.

Some Solutions



Lyons Township High Scho
LaGrange, Illinois

Donald Reber, Superintende
Perkins & Will, Architects

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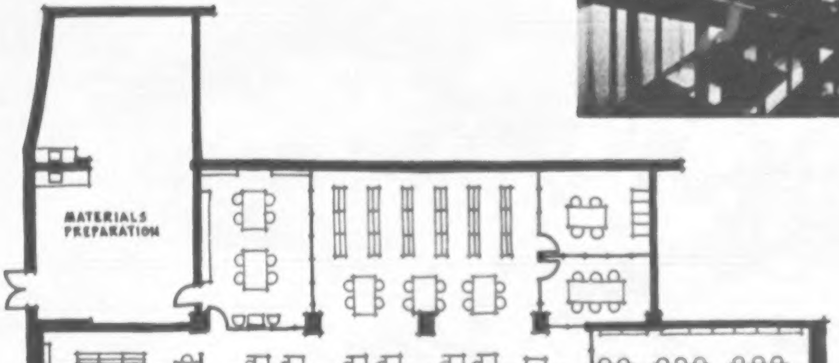
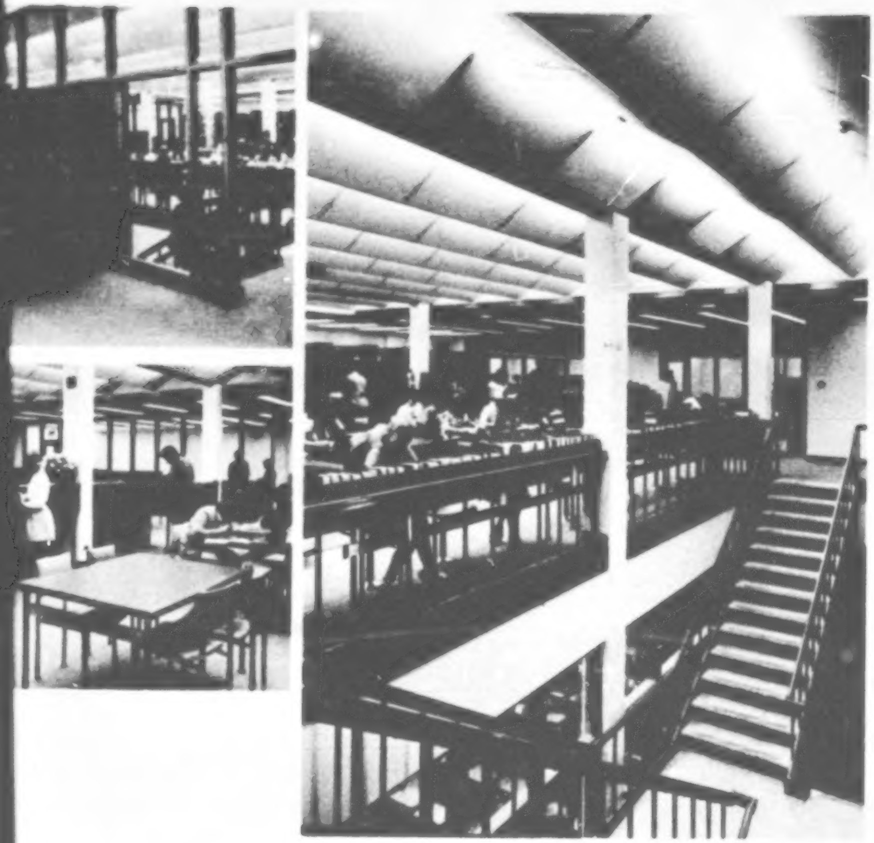
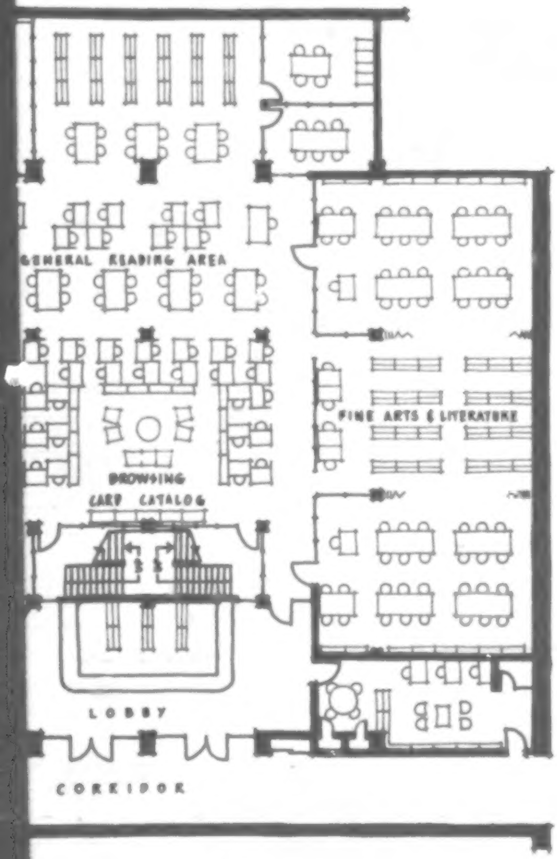

MATERIALS PREPARATION
GENERAL READING AREA
MATH & SCIENCE
FINE ARTS & LITERATURE
BROWSING
CARD CATALOG
LOBBY
CORRIDOR





Lyons Township High School
LaGrange, Illinois

Donald Reber, Superintendent
Perkins & Will, Architects

By 1967 it was quite apparent that Lyons Township High School had outgrown its library. Designed to house books and periodicals, it provided little space or opportunity for student and teacher involvement in a variety of learning experiences. The high school had no land space available to build a new and needed learning center but it did have a girls' gymnasium located at the very center of the huge building complex.

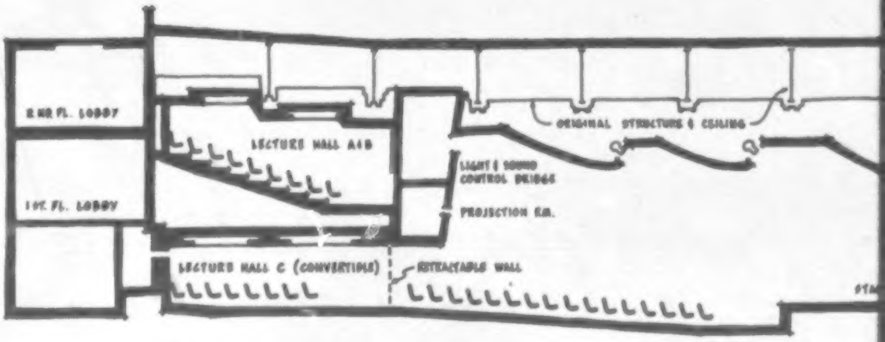
This gymnasium, together with its small locker rooms and a running track above the gym floor, became the logical space for the placement of the new learning center. When completed, this new two-story air conditioned and carpeted learning center provided free and open space for more than four hundred students and teachers at the same time.

With the advent of advanced communications, this auditorium had become a liability rather than an asset. No longer were weekly assembly programs held to entertain the students. The community itself tended to seek other forms of entertainment than that provided in the traditional school auditorium.

Designed to seat 1,800, its vastness tended to distract from the kind of "intimate" social and personal contacts so much a part of today's culture.

Rather than update the present auditorium, it was decided to utilize the existing structure in a totally new and different way. It was hoped that the present "large" audience situation could be maintained but with some of the amenities (thermal control, carpeting, thrust stage, wrap-around seating, appropriate acoustics for music, speech and drama) as a vital part of the project. In addition, it was hoped that several large group instructional areas, through use of controlled and movable partitions, could also be provided.

Whereas the old auditorium remained idle for most of the day, the new spaces are used by many groups throughout each school day.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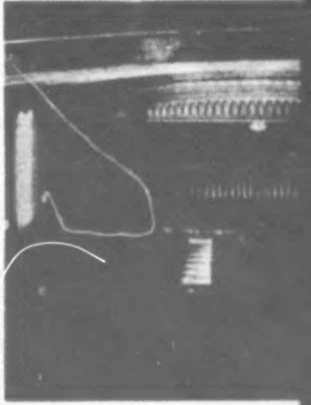
1ST. FL. LOBBY
LECTURE HALL A&B
ORIGINAL STRUCTURE & CEILING
LIGHT & SOUND CONTROL BRIDGE
PROJECTION RM.
LECTURE HALL C (CONVERTIBLE)
RETRACTABLE WALL



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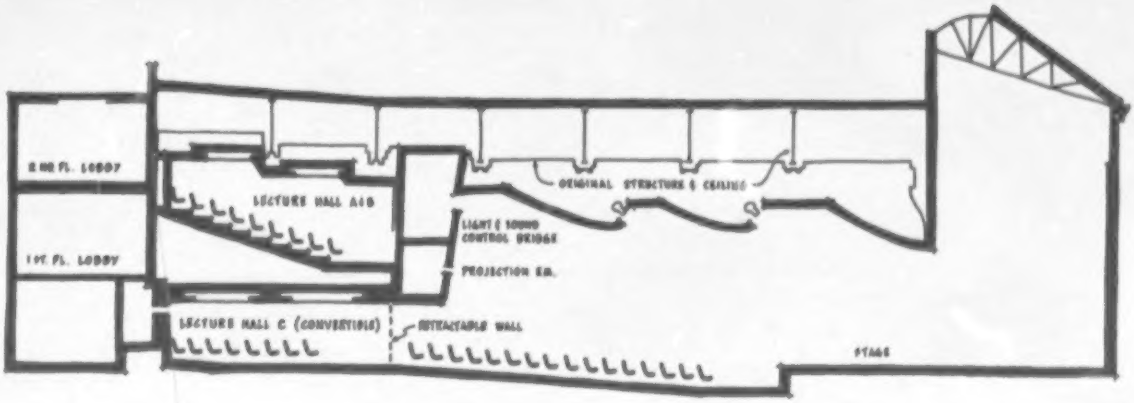
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1ST. FL. LOBBY
LECTURE HALL A & B
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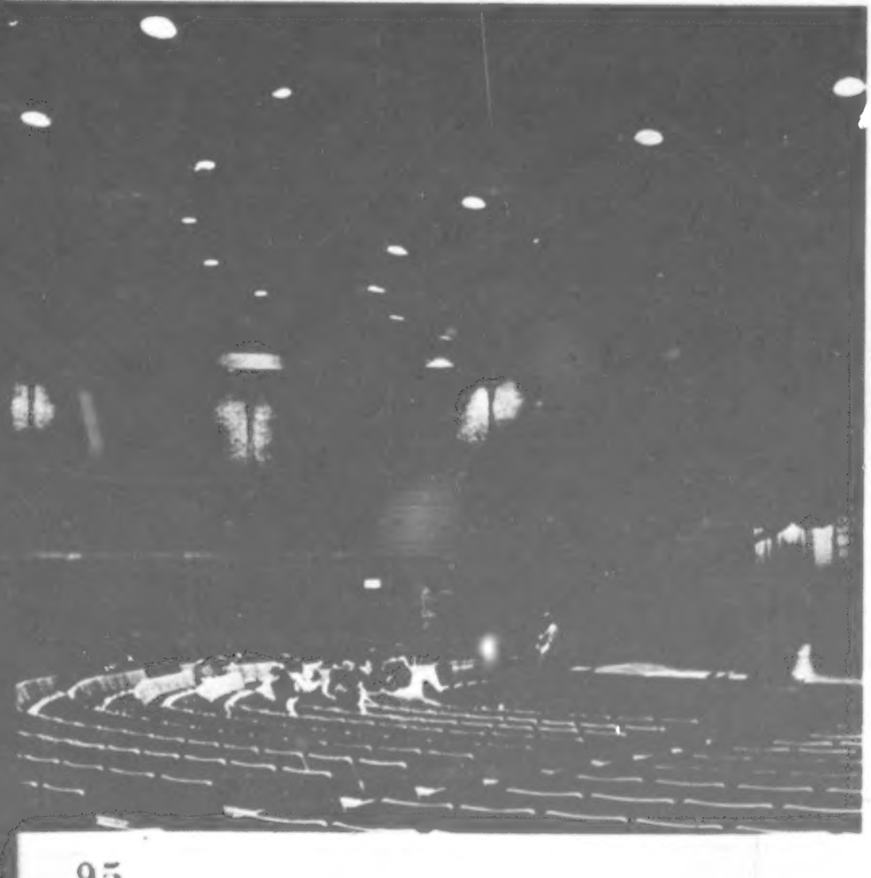
ORIGINAL STRUCTURE & CEILING
LECTURE HALL C (CONVERTIBLE)
RETRACTABLE WALL
STAGE



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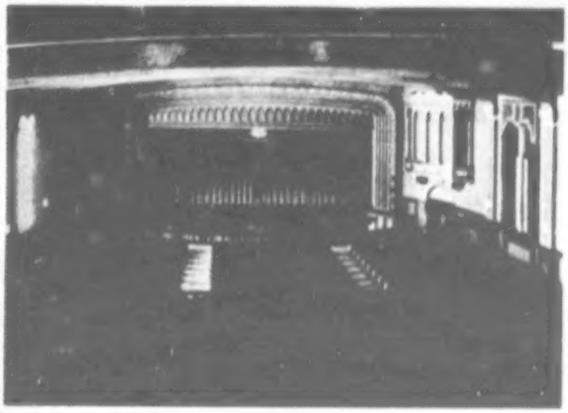

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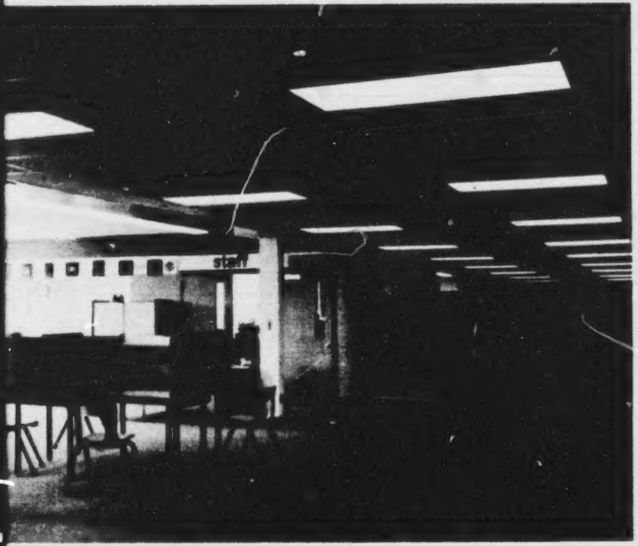
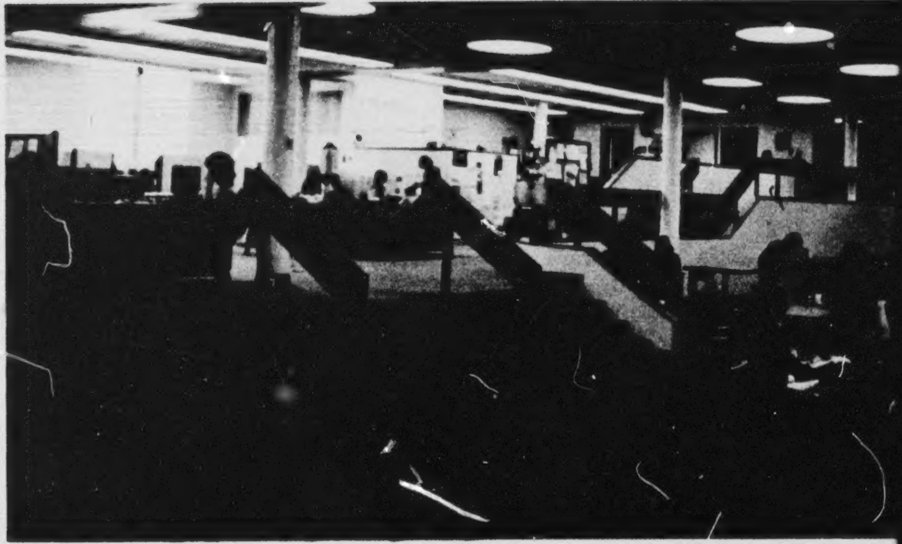


Renovated Corridor



New Student Lounge in Former Courtyard

Parkway Central Senior High School
Chesterfield, Missouri

Wayne W. Fick, Superintendent
Wm. B. Ittner, Architects

With the recent compl
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A complete renovation
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The new fine arts addition
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New Student Lounge in Former Courtyard

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Chesterfield, Missouri

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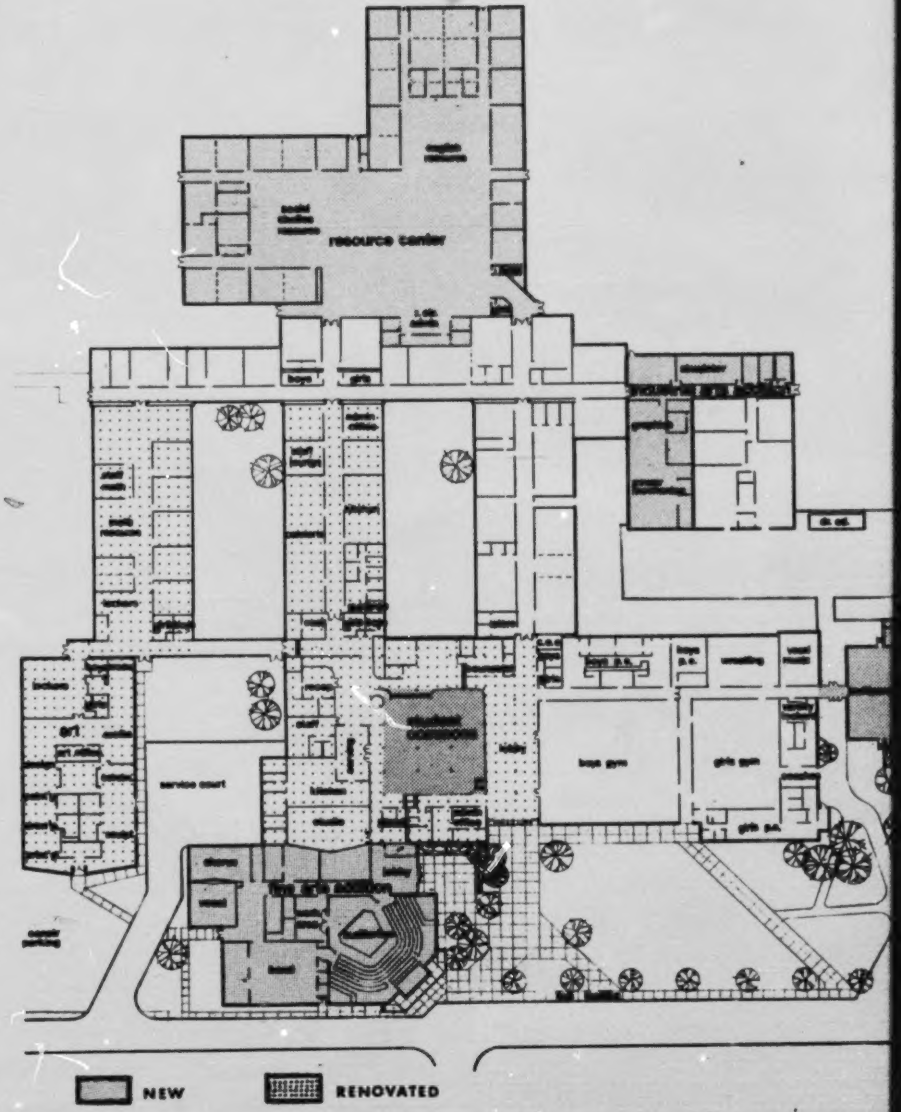
With the recent completion of two new high schools in Parkway School District, it became evident that students in the original high school were being treated as "second class" citizens insofar as the housing of the educational efforts was concerned.

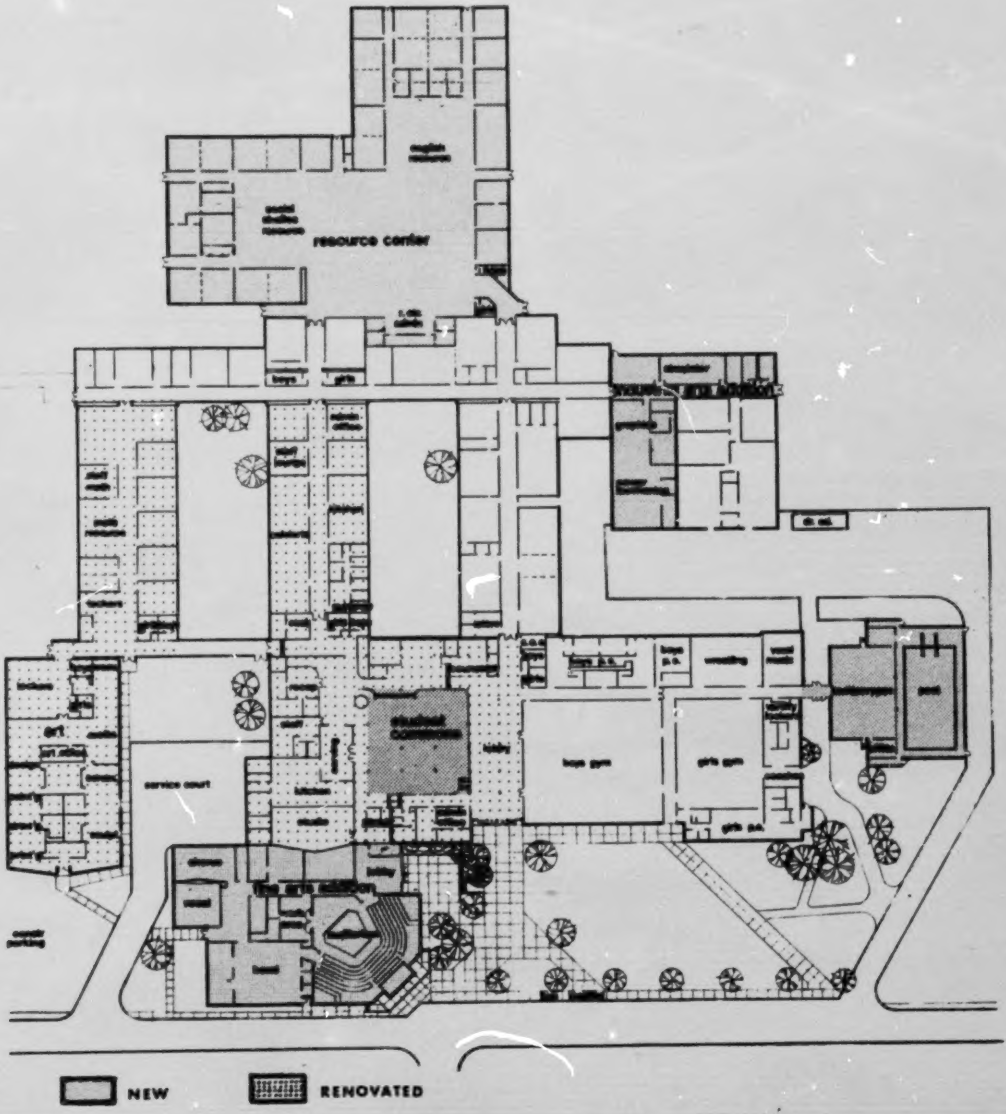
A complete renovation project was therefore undertaken with the purpose of equalizing opportunities for the students in this school. The construction of a student lounge in a former open courtyard was perhaps the most spectacular change effected. The new fine arts addition and remodeling are still under way as this publication is being brought together. Re-creation is a growing, vital process.

social studies

New IMC


resource center
boys
girls
art
service court
kitchen
student commons
lobby
boys gym
girls gym
wrestling
girls p.e.
fine arts addition
band
NEW
RENOVATED

99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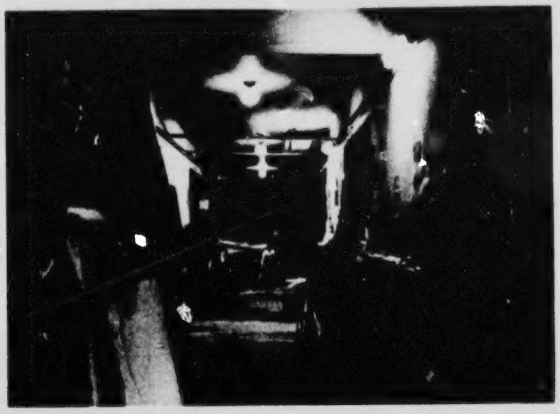
RENOVATED

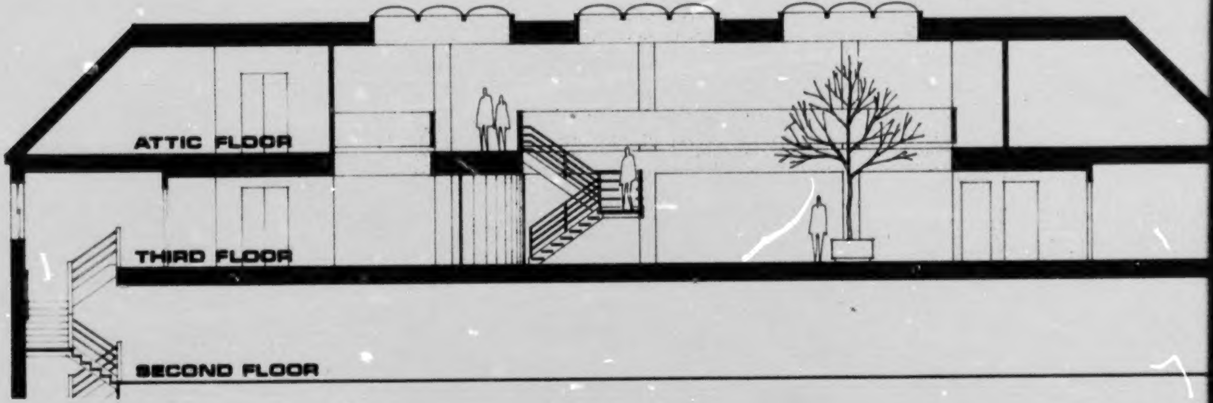
100



National Cathedral School f
Washington, D.C.

Edward A. Curran, Headma
Chatelain, Samperton & No

Rehabilitation of existi dormitory and attic spaces f centralized art facility for a girls school.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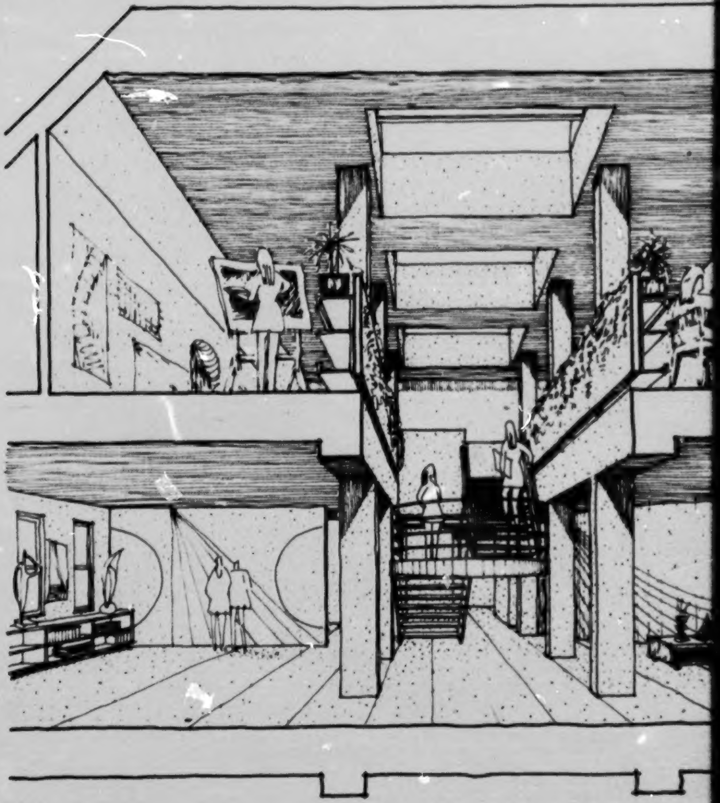
THIRD FLOOR
SECOND FLOOR



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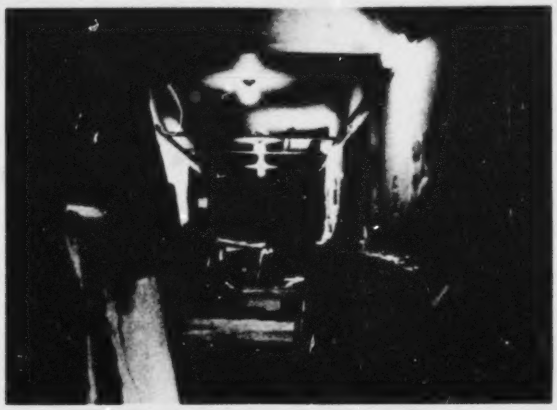
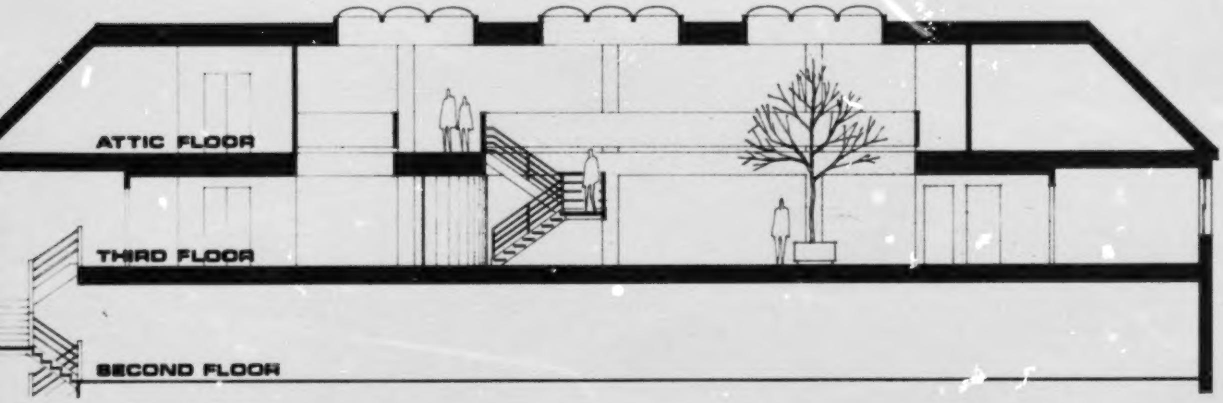


National Cathedral School for Girls
Washington, D.C.

Edward A. Curran, Headmaster
Chatelain, Samperton & Nolan, Architects

Rehabilitation of existing third floor dormitory and attic spaces for use as a centralized art facility for a private girls school.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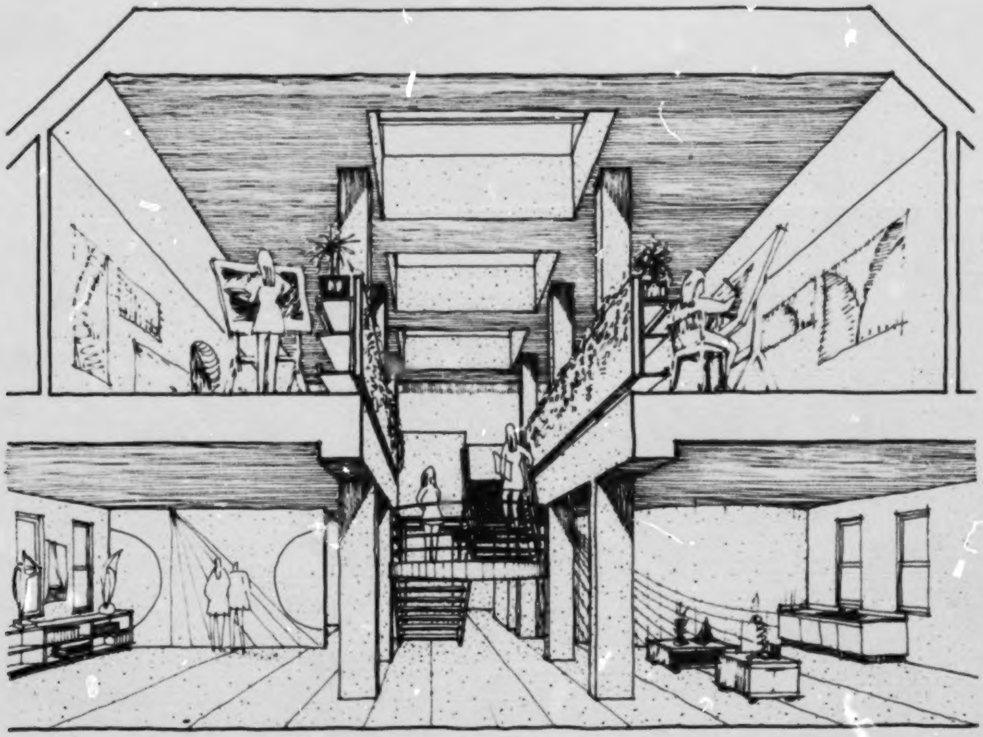
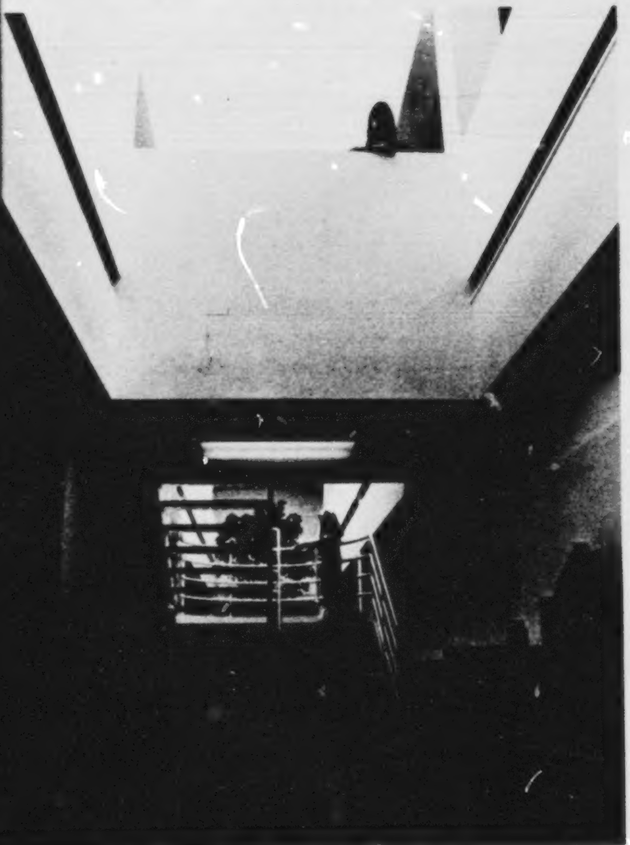
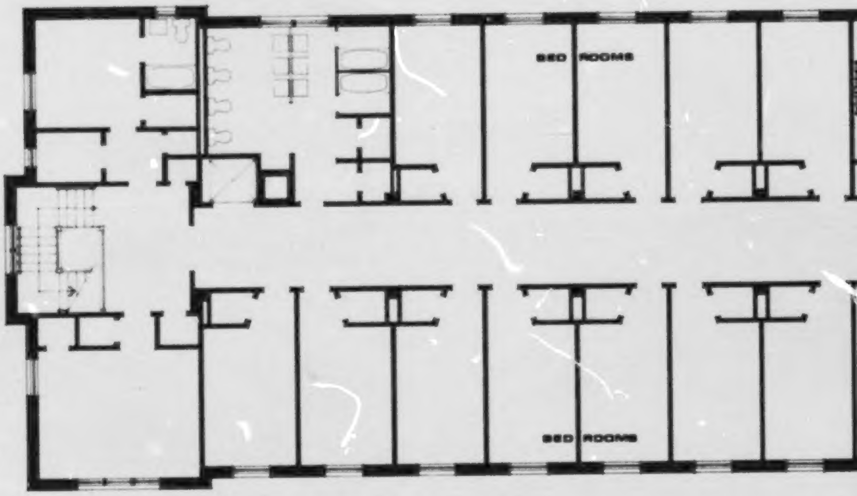
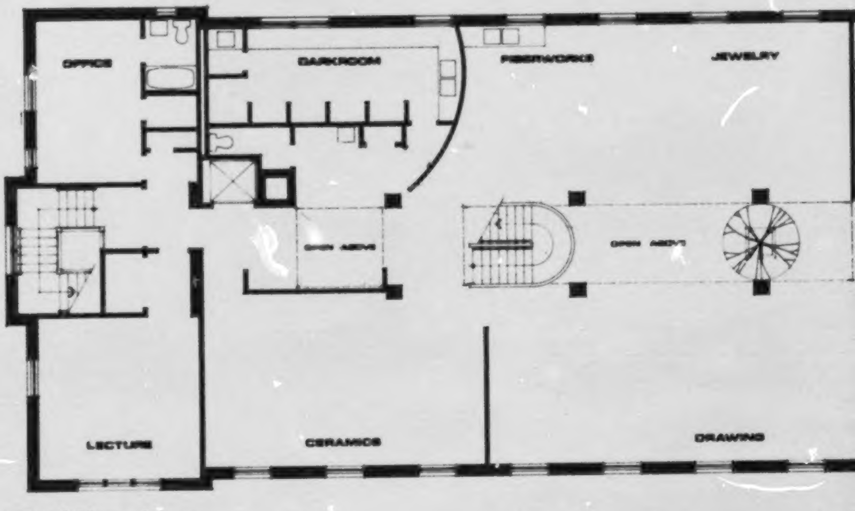


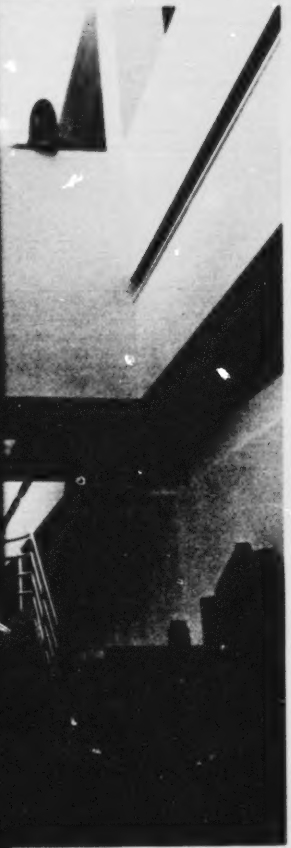


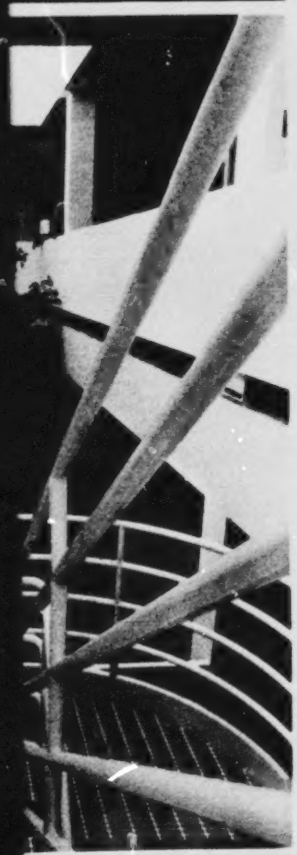

BED ROOMS
BED ROOMS

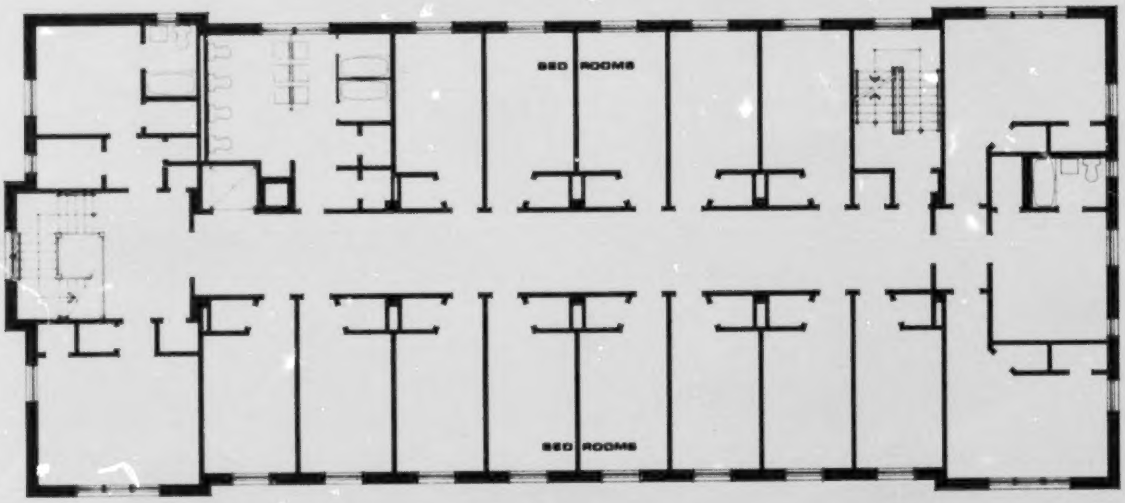
Third Floor Before


OFFICE
DARKROOM
FIBERWORKS
JEWELRY
OPEN ABOVE
OPEN ABOVE
LECTURE
CERAMICS
DRAWING

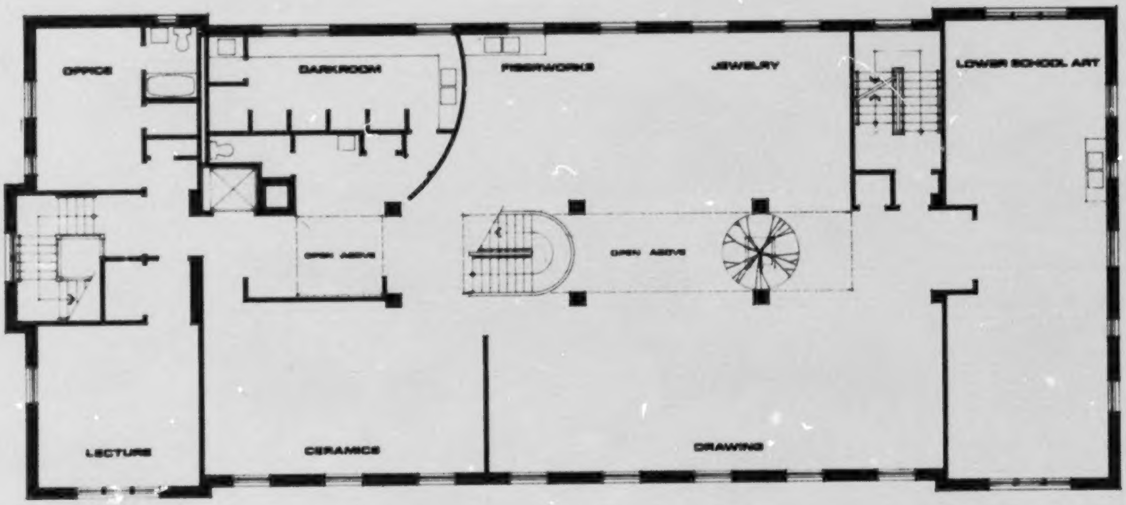
Third Floor After






BED ROOMS
BED ROOMS

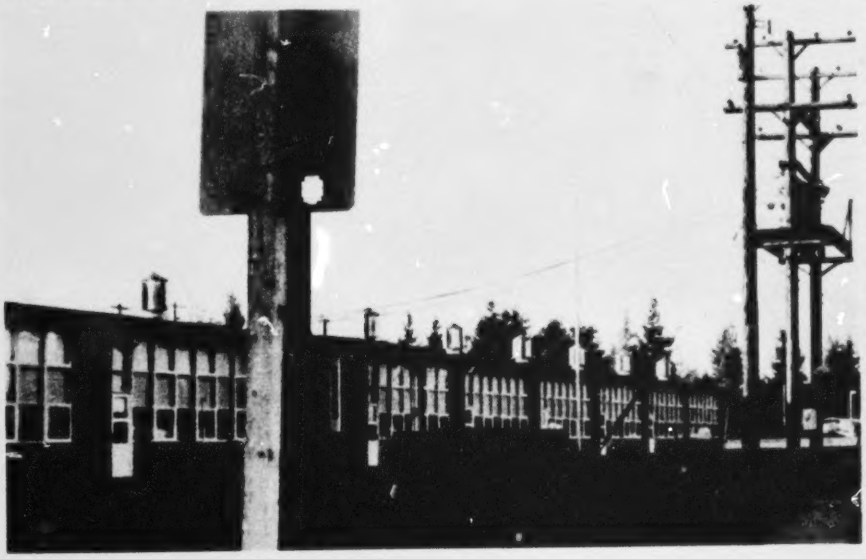
Third Floor Before

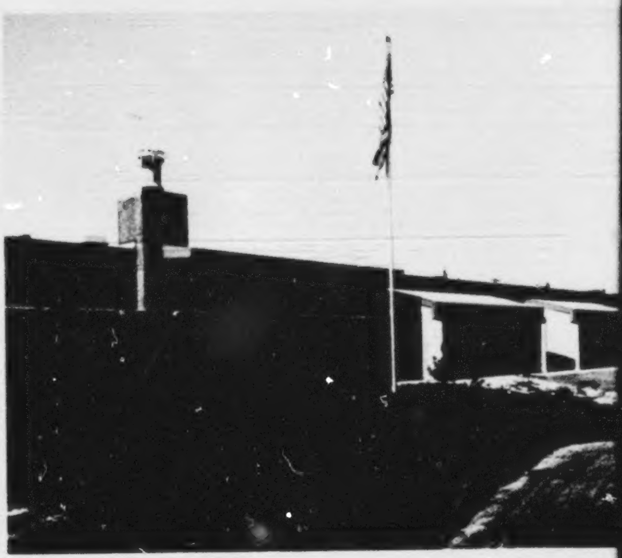

OFFICE
DARKROOM
FIBERWORKS
JEWELRY
LOWER SCHOOL ART
OPEN ABOVE
OPEN ABOVE
LECTURE
CERAMICS
DRAWING

Third Floor After

Orchard Heights Elementary School
Port Orchard, Washington

William E. Davis, Superintendent
Rue & Butler, Architects



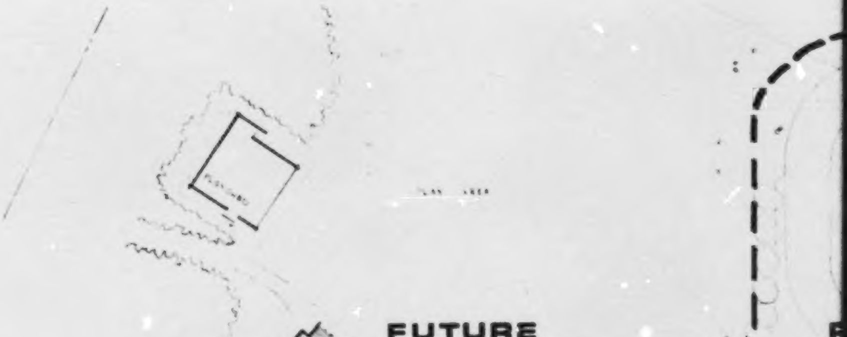


The school complex consisted of two thirty-year-old classroom buildings that had never been updated except for maintenance. A third building (wood frame due for demolition) currently houses the lunch program. A master plan for the entire 900 student complex has been completed based on new educational specifications.

Phase 1 consists of modernization and addition to one existing building in accordance with the master plan. It will house 14 enlarged, flexible classrooms, an arena, resource center, planning center, student activity lab, and three kindergarten rooms and adjoining spaces. The original corridor area has been redesigned to provide learning stations along its entire length.

Existing classrooms were approximately 700 square feet in size with approximately one electrical outlet per classroom and 1940 lighting. Expansion modules increased classroom areas to usable size. Corridor spaces now are utilized as learning areas rather than for circulation only, since each classroom has its own entry/exit door and porch.

When the future second phase is completed many of the areas temporarily housed in the first phase will be relocated in the new addition.



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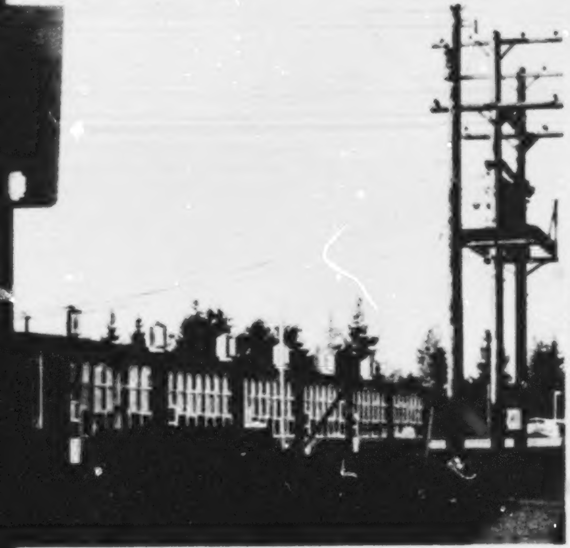

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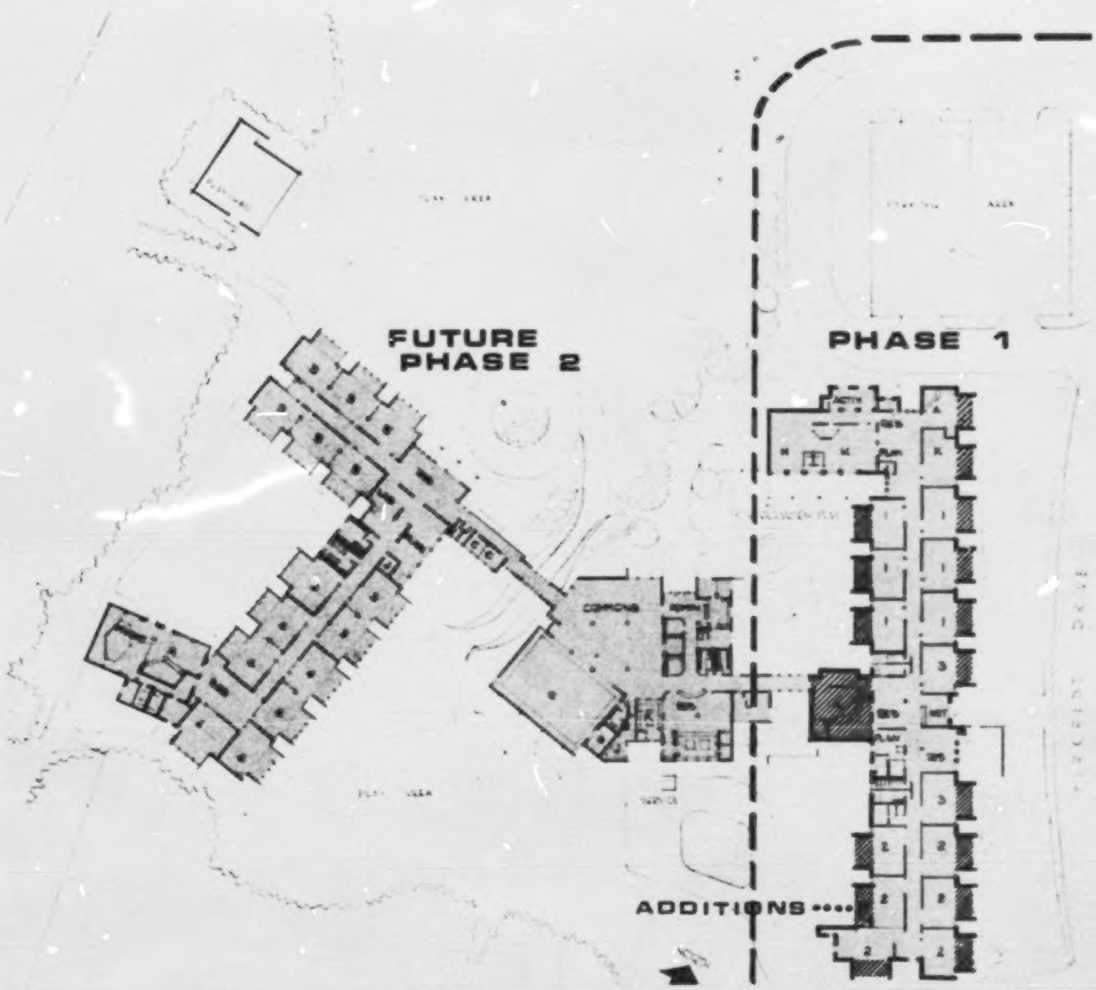
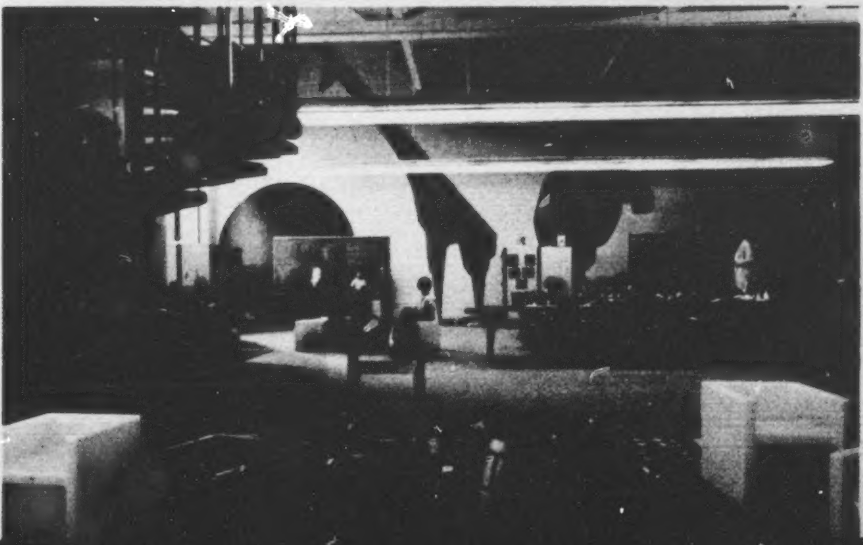
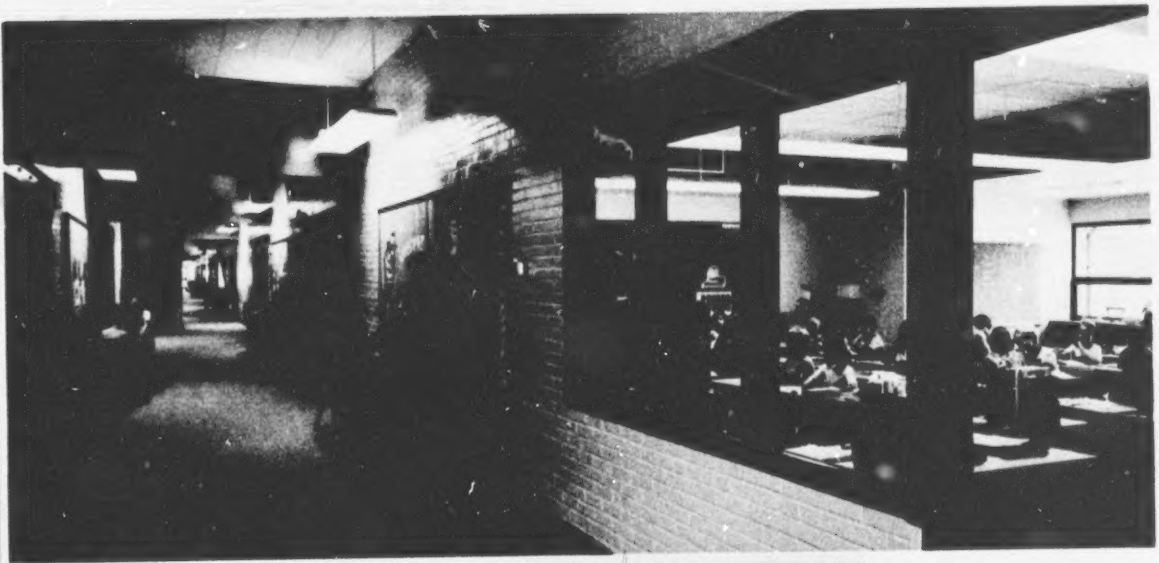
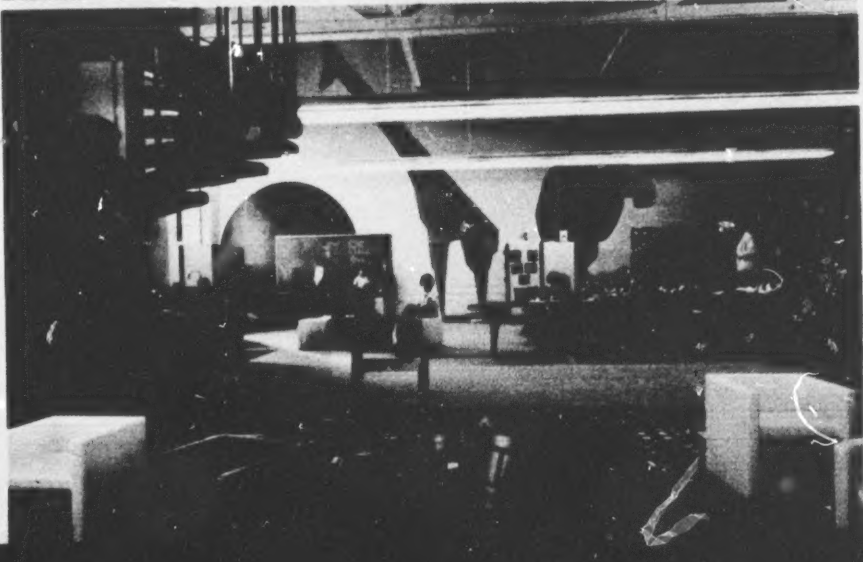

FUTURE PHASE 2
PHASE 1
COMMONS
ADDITIONS





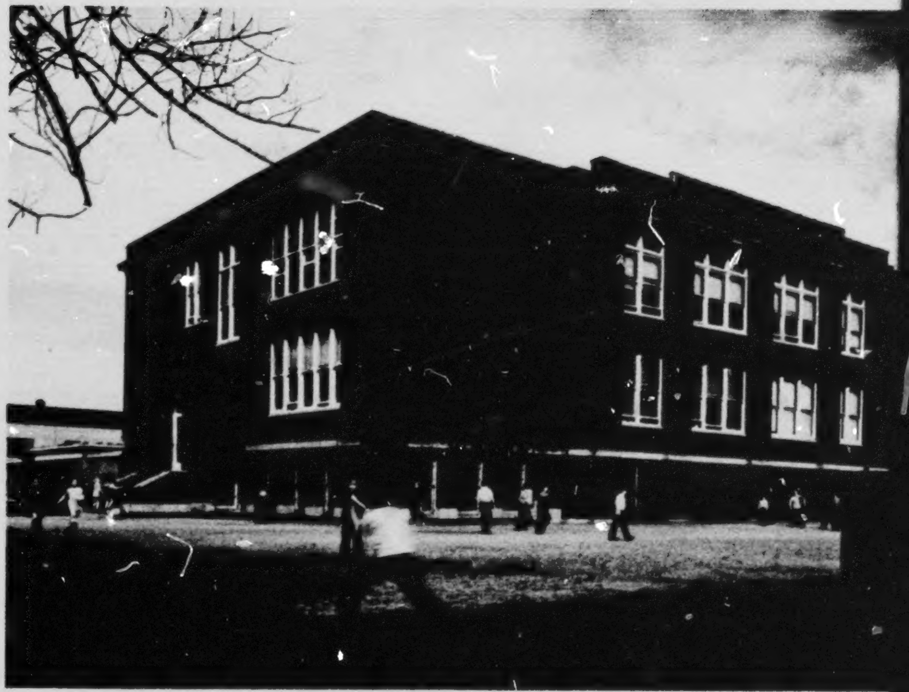


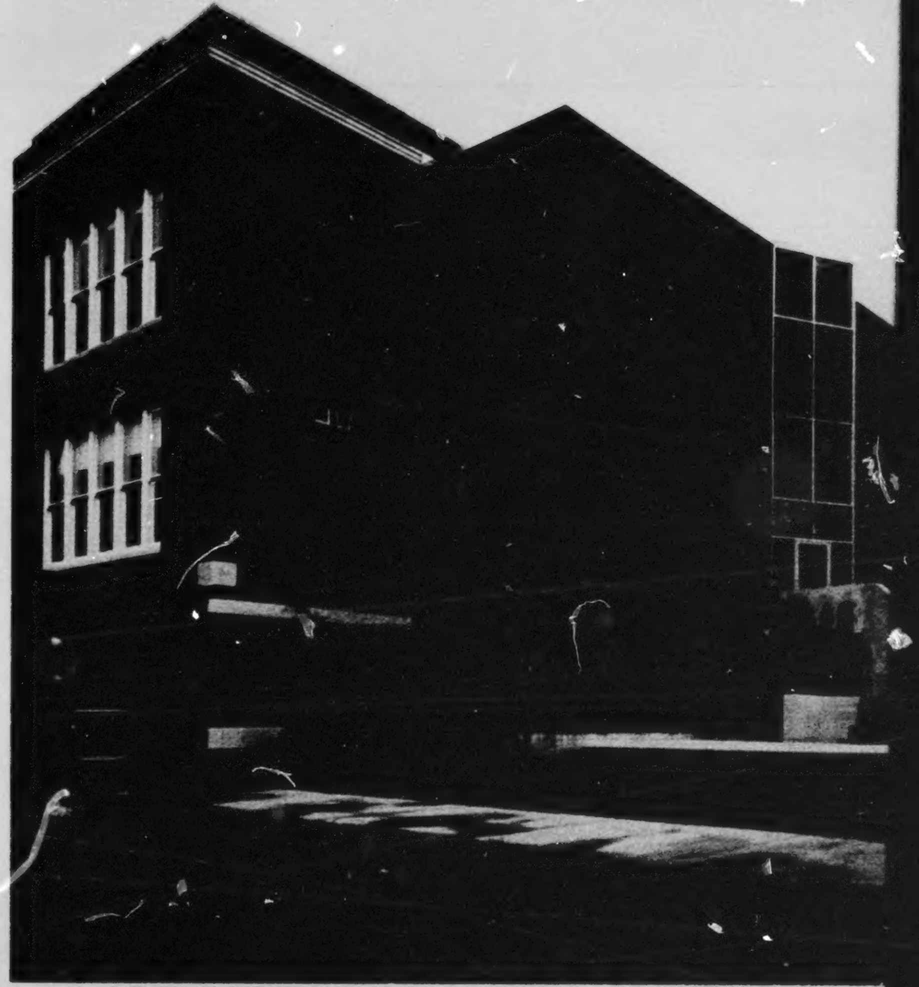
107

108

Frontier Elementary School
Brookston, Indiana

Dale Sheets, Superintendent
K/M Associates, Architects





109

110

As the old saying goes,
mother of invention." This
Northern Indiana rural scho
base made the consideration
elementary building somew
When the architects survey
story 1916 building, the ver
could be brought up to curr
and safety standards at a re

New construction is m
new towers to handle neede
toilets. Under a grant from
Facilities Laboratories, two
converted to open teaching
consultants were brought in
staff as they tried new prog
before making a final comm
was rented, a truck load of
Canadian firm brought in o
and some furniture and equ
by the district. The decisio
concerned—faculty, parent
go with team teaching and

To accomplish the mo
minimum of disruption, sch
two weeks early in May an
two weeks late in the fall.
was done on vacation perio
in the summer.

As the old saying goes, "Necessity is the mother of invention." This is so true of this Northern Indiana rural school. A limited tax base made the consideration of a new elementary building somewhat unrealistic. When the architects surveyed the old three-story 1916 building, the verdict was that it could be brought up to current educational and safety standards at a reasonable cost.

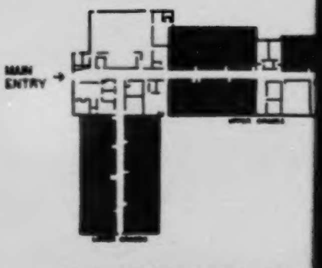
New construction is minor—primarily new towers to handle needed stairs and toilets. Under a grant from Educational Facilities Laboratories, two areas were converted to open teaching spaces and consultants were brought in to work with the staff as they tried new programs on for size before making a final commitment. Carpeting was rented, a truck load of furniture from a Canadian firm brought in on consignment, and some furniture and equipment designed by the district. The decision of all concerned—faculty, parents, pupils—was to go with team teaching and open plan.

To accomplish the modernization with a minimum of disruption, school was dismissed two weeks early in May and started again two weeks late in the fall. "Left over" work was done on vacation periods and completed in the summer.

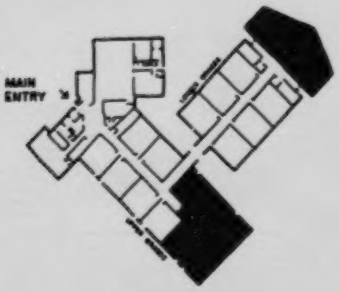
Glenview District Remodeling
Glenview, Illinois

William Attea, Superintendent
Perkins & Will, Architects

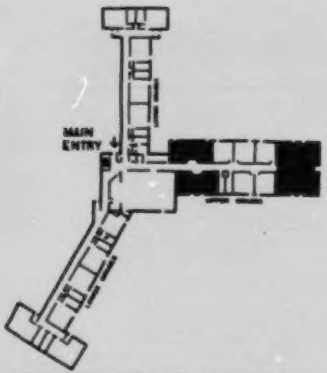
Districtwide remodeling program to upgrade the learning environment, consisting generally of removing many of the partitions between classrooms and between corridors and classrooms, to achieve more open spaces.



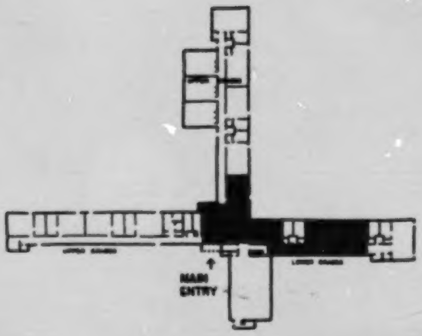
GLEN GROVE SCHO
LOUIS HENKING SCH



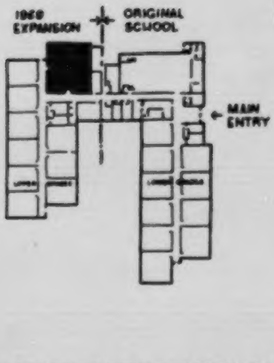
HOFFMAN SCHOOL



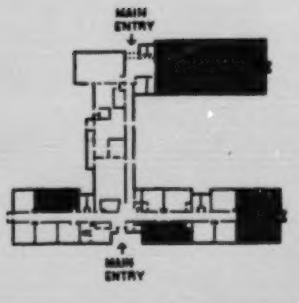
CLYDE LYONS SCHOOL



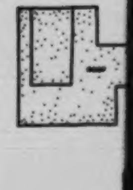
RUGEN SCHOOL


1960 EXPANSION
ORIGINAL SCHOOL
MAIN ENTRY

PLEASANT RIDGE SCHOOL


MAIN ENTRY
MAIN ENTRY

WESTBROOK SCHOOL



SPRINGMA

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program to
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of the partitions
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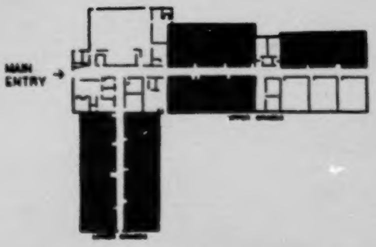
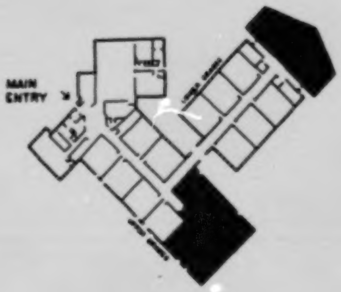
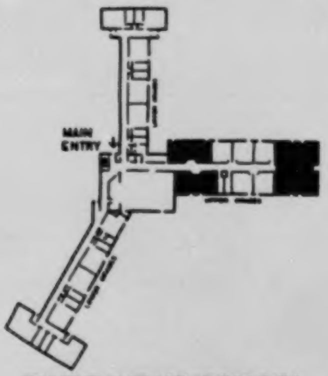


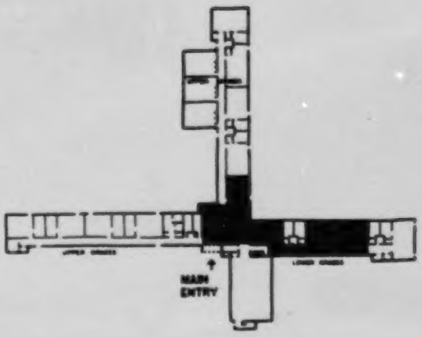
GLEN GROVE SCHOOL
LOUIS HENKING SCHOOL



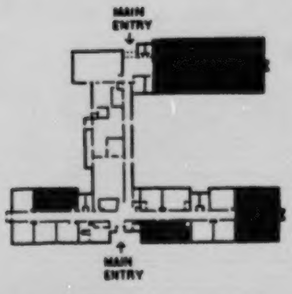
HOFFMAN SCHOOL



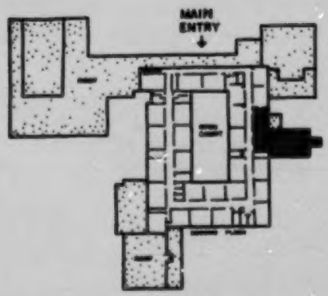
CLYDE LYONS SCHOOL



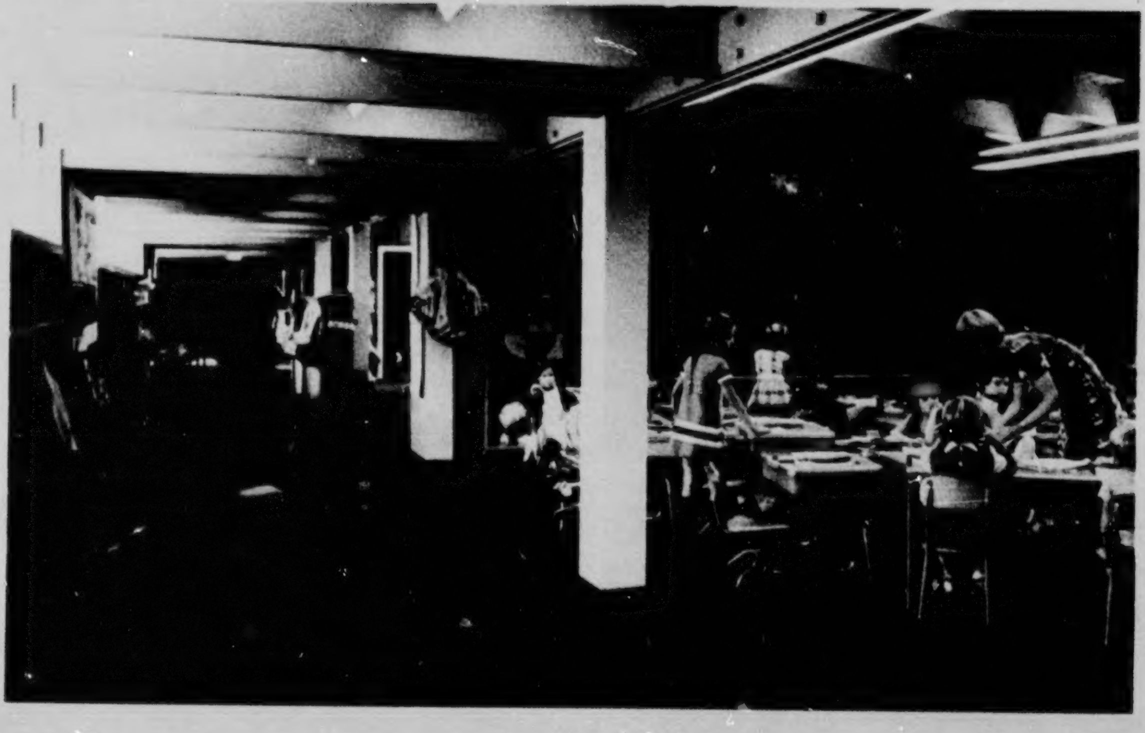
RUGEN SCHOOL


MAIN ENTRY
MAIN ENTRY

WESTBROOK SCHOOL



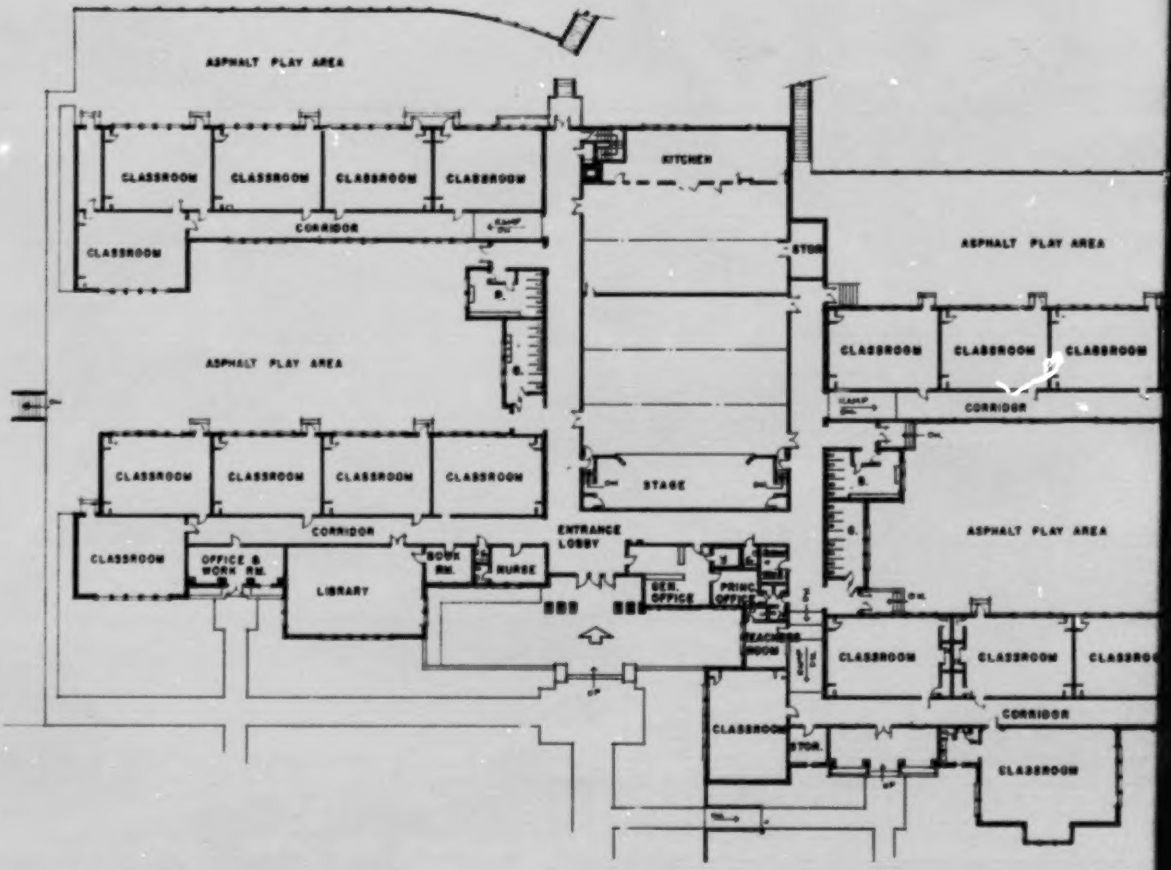
SPRINGMAN JR. HIGH SCHOOL



Frank Givens Community Ele
Port Orchard, Washington

William E. Davis, Superintend
Burr & Associates, Architects

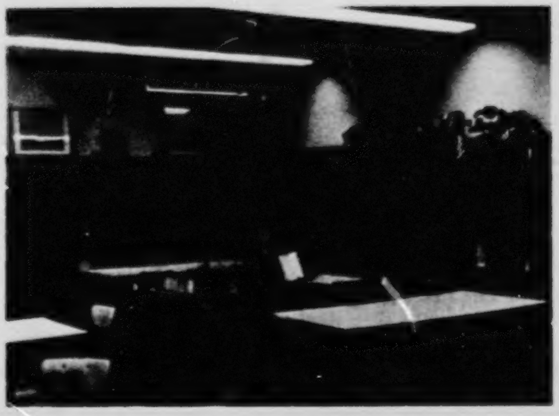
The original school, buil
become obsolete and inadequ
for replacement were unavail
often the case. The rehabilita
revealed that great savings co
by modernization of the exist
rather than by replacing it.
Modernization of this 50
elementary school literally op
building, the program and th
for its occupants, and become
for community social and edu
activities.


ASPHALT PLAY AREA
CLASSROOM
CLASSROOM
CLASSROOM
CLASSROOM
KITCHEN
RAMP DN.
CORRIDOR
CLASSROOM
STOR.
ASPHALT PLAY AREA
ASPHALT PLAY AREA
CLASSROOM
CLASSROOM
CLASSROOM
RAMP DN.
CORRIDOR
CLASSROOM
CLASSROOM
CLASSROOM
CLASSROOM
STAGE
ASPHALT PLAY AREA
CORRIDOR
ENTRANCE LOBBY
CLASSROOM
OFFICE & WORK RM.
BOOK RM.
NURSE
LIBRARY
GEN. OFFICE
PRINC. OFFICE
TEACHERS ROOM
CLASSROOM
CLASSROOM
CLASSRO
CORRIDOR
CLASSROOM
STOR.
CLASSROOM

Floor Plan Before

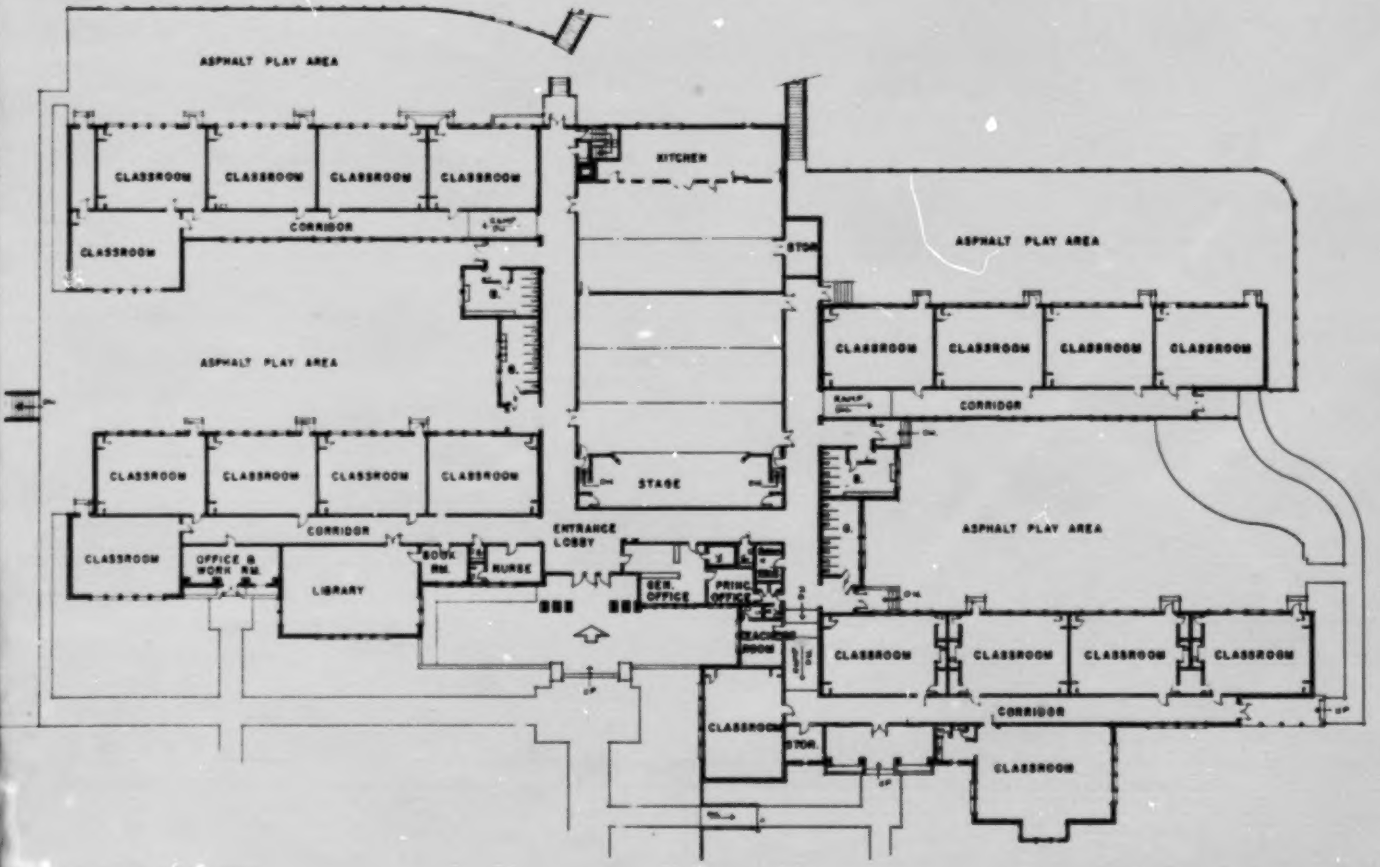
Frank Givens Community Elementary School
Port Orchard, Washington

William E. Davis, Superintendent
Burr & Associates, Architects



The original school, built in 1942, had become obsolete and inadequate, and funds for replacement were unavailable—as is so often the case. The rehabilitation study revealed that great savings could be realized by modernization of the existing structure rather than by replacing it.

Modernization of this 500-student elementary school literally opens up the building, the program and the opportunities for its occupants, and becomes the focal poi for community social and educational activities.


ASPHALT PLAY AREA
CLASSROOM
CLASSROOM
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CLASSROOM
CORRIDOR
RAMP
KITCHEN
STOR
ASPHALT PLAY AREA
ASPHALT PLAY AREA
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CORRIDOR
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STAGE
CORRIDOR
CLASSROOM
OFFICE & WORK RM.
LIBRARY
BOOK RM.
NURSE
ENTRANCE LOBBY
GEN. OFFICE
PRINC. OFFICE
TEACHERS ROOM
ASPHALT PLAY AREA
CLASSROOM
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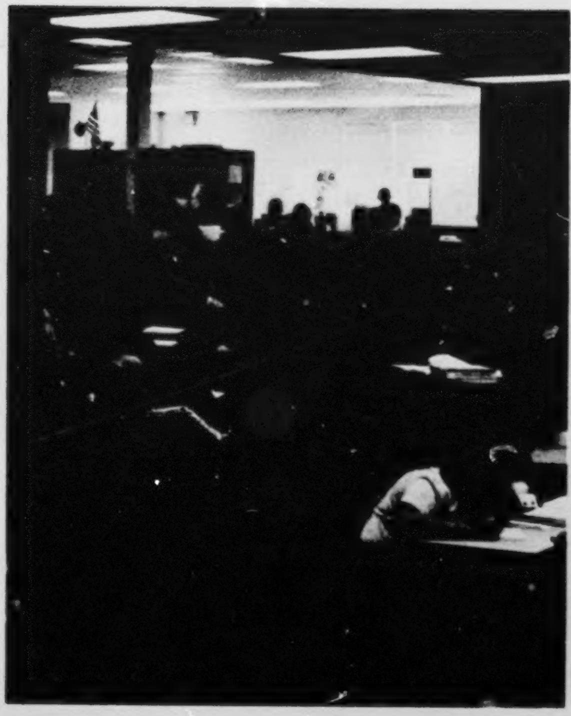
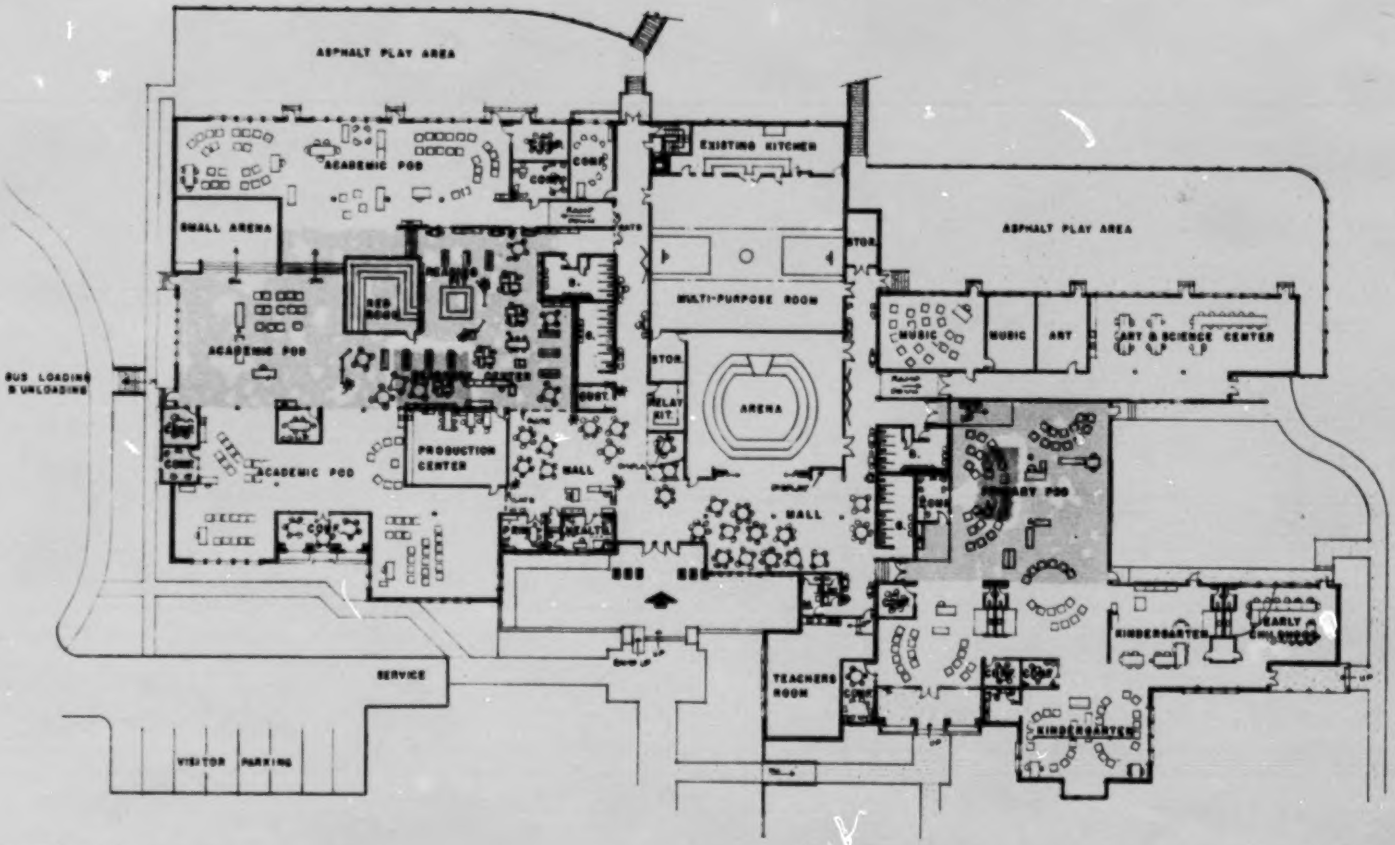
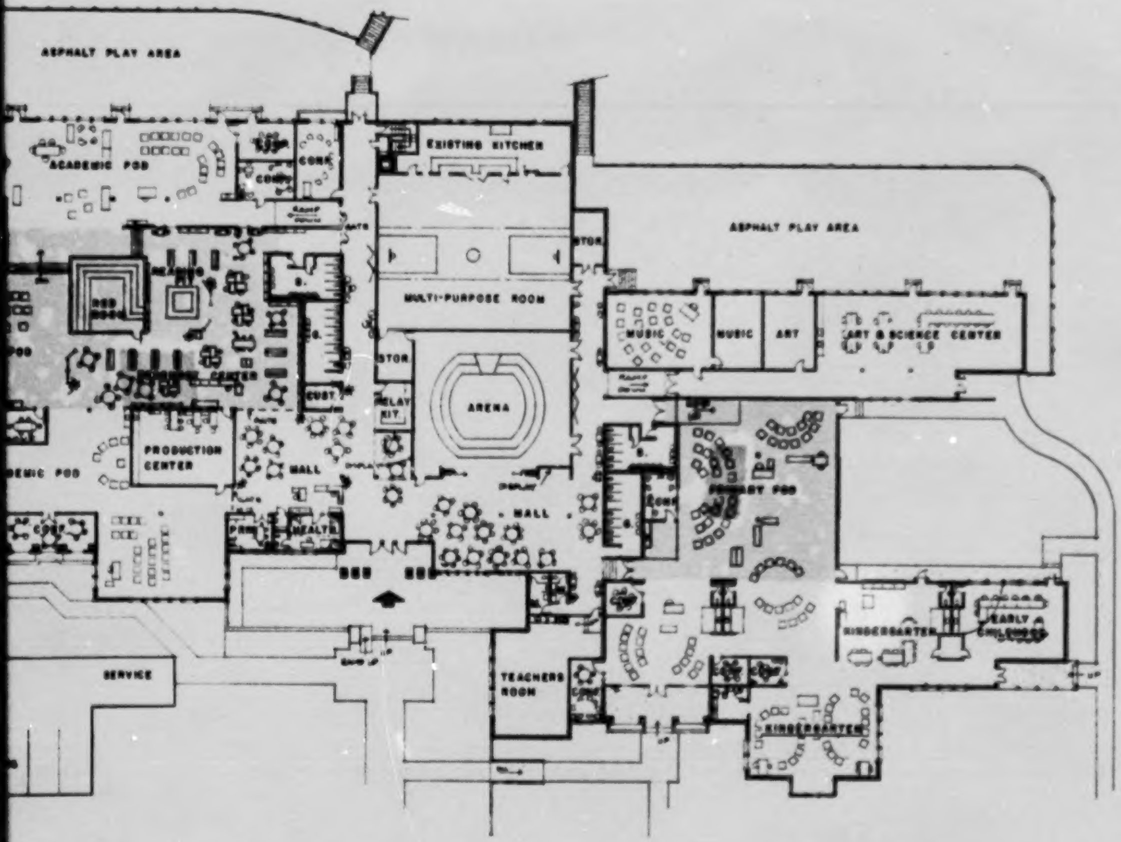
CORRIDOR
CLASSROOM
STOR.
CLASSROOM
UP

loor Plan Before




ASPHALT PLAY AREA
ACADEMIC POD
CONF.
EXISTING KITCHEN
SMALL ARENA
RED ROOM
ASPHALT PLAY AREA
STOR.
MULTI-PURPOSE ROOM
MUSIC
MUSIC
ART
ART & SCIENCE CENTER
BUS LOADING & UNLOADING
ACADEMIC POD
STOR.
ARENA
RELAY KIT.
PRODUCTION CENTER
ACADEMIC POD
MALL
MALL
PRIMARY POD
CONF.
HEALTH
KINDERGARTEN
EARLY CHILDHOOD
TEACHERS ROOM
KINDERGARTEN
SERVICE
VISITOR PARKING

Floor Plan After


ASPHALT PLAY AREA
ACADEMIC POD
CONF
CONF
EXISTING KITCHEN
READING
MULTI-PURPOSE ROOM
STOR
ASPHALT PLAY AREA
MUSIC
MUSIC
ART
ART & SCIENCE CENTER
STOR
ARENA
RELAY KIT
CUST
PRODUCTION CENTER
HALL
HALL
PRIMARY POD
CONF
PRIN
HEALTH
KINDERGARTEN
EARLY CHILDHOOD
TEACHERS ROOM
CONF
SERVICE
KINDERGARTEN

118

119

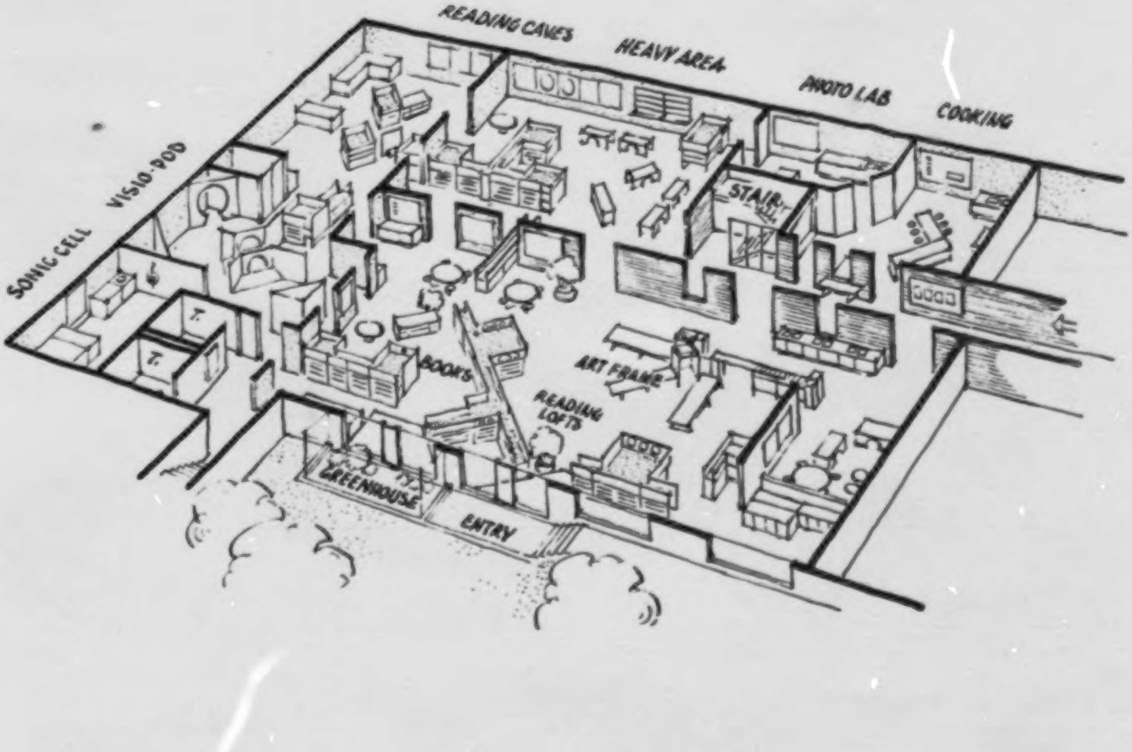
Crow Island School
Winnetka, Illinois

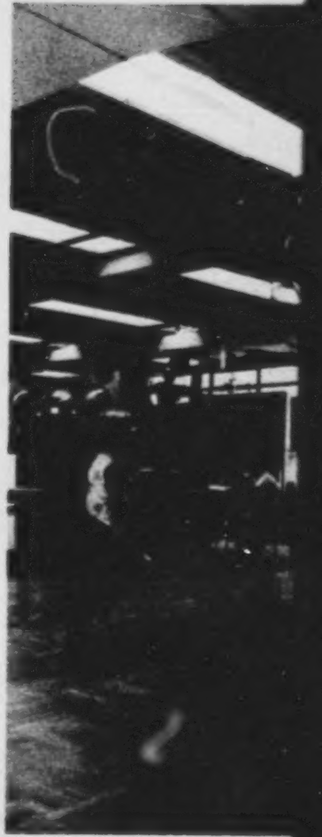
Gordon Peterkin, Superintendent
Perkins & Will, Architects

Space was needed for lib
other resources and for arts a
activities, so this district conv
basement of this 35-year-old
elementary school into a mul
center. The basement previo
for storage by a community
Minor structural changes we
an interesting configuration
passageways, and spatial arr

The space was designed
students and was planned to
natural kind of place which
their imaginations. The exis
tile ceiling was removed to a
head room and a fluorescent
installed. The duct work and
color coded for easy student
and to add color and variety

The resource center inc
a variety of activities not reg
in the classroom. It has been
enjoyable, innovative enviro
encourages children to explo
interests.


READING CAVES
HEAVY AREA
PHOTO LAB
COOKING
VISIO-POD
SONIC CELL
STAIR
T.
T.
BOOKS
ART FRAME
READING LOFTS
GREENHOUSE
ENTRY

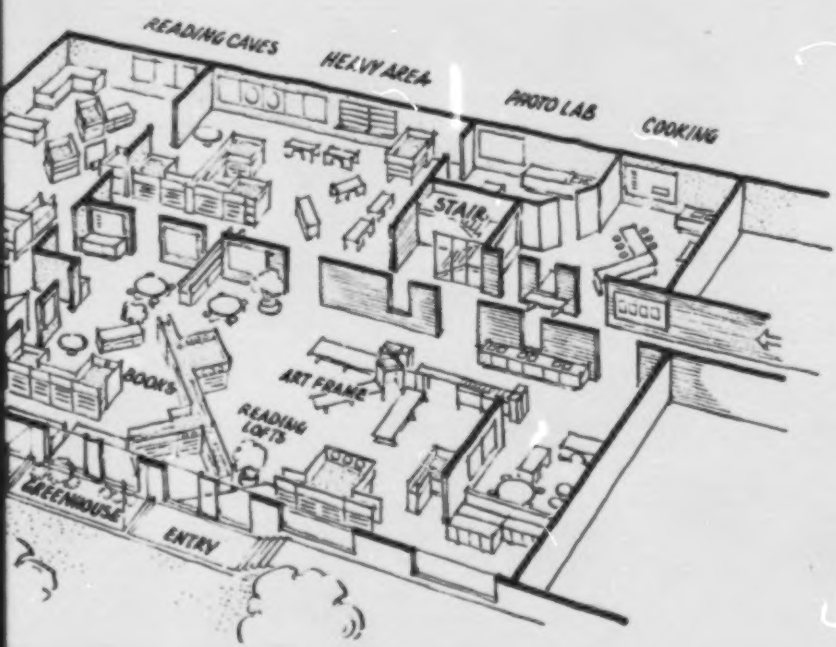


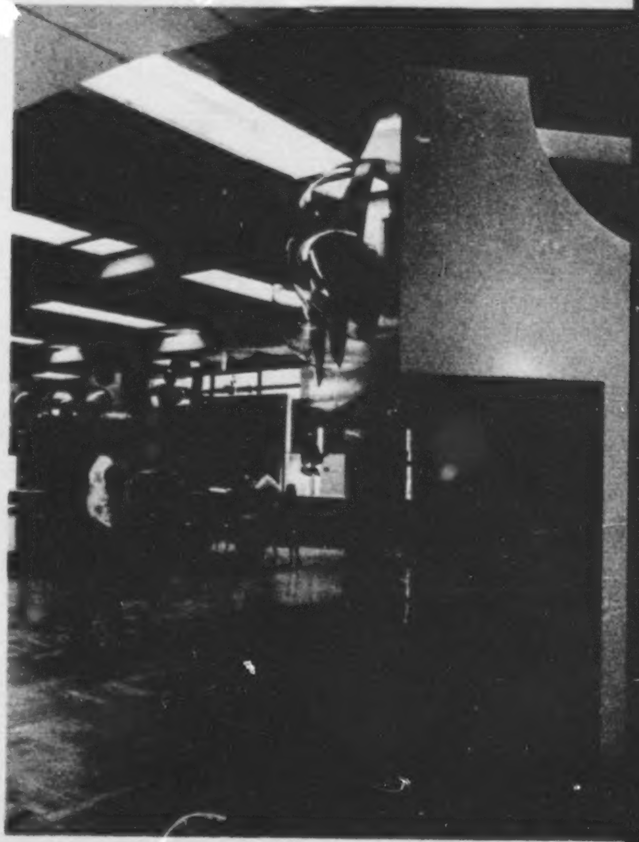
ndent

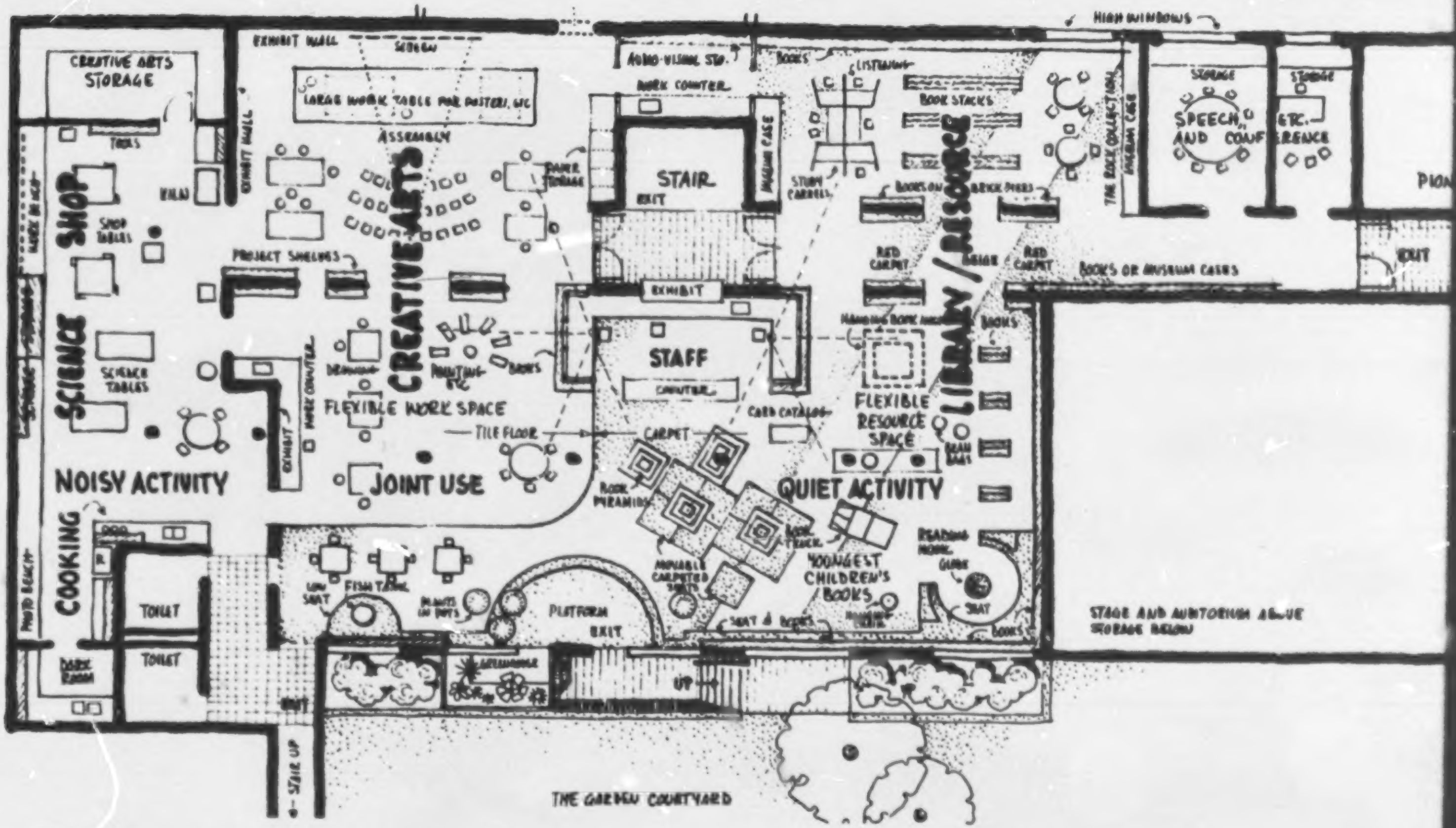
Space was needed for library books and other resources and for arts and crafts activities, so this district converted the basement of this 35-year-old, landmark elementary school into a multi-use resource center. The basement previously was used for storage by a community resale shop. Minor structural changes were made with an interesting configuration of exposed pipes, passageways, and spatial arrangements.

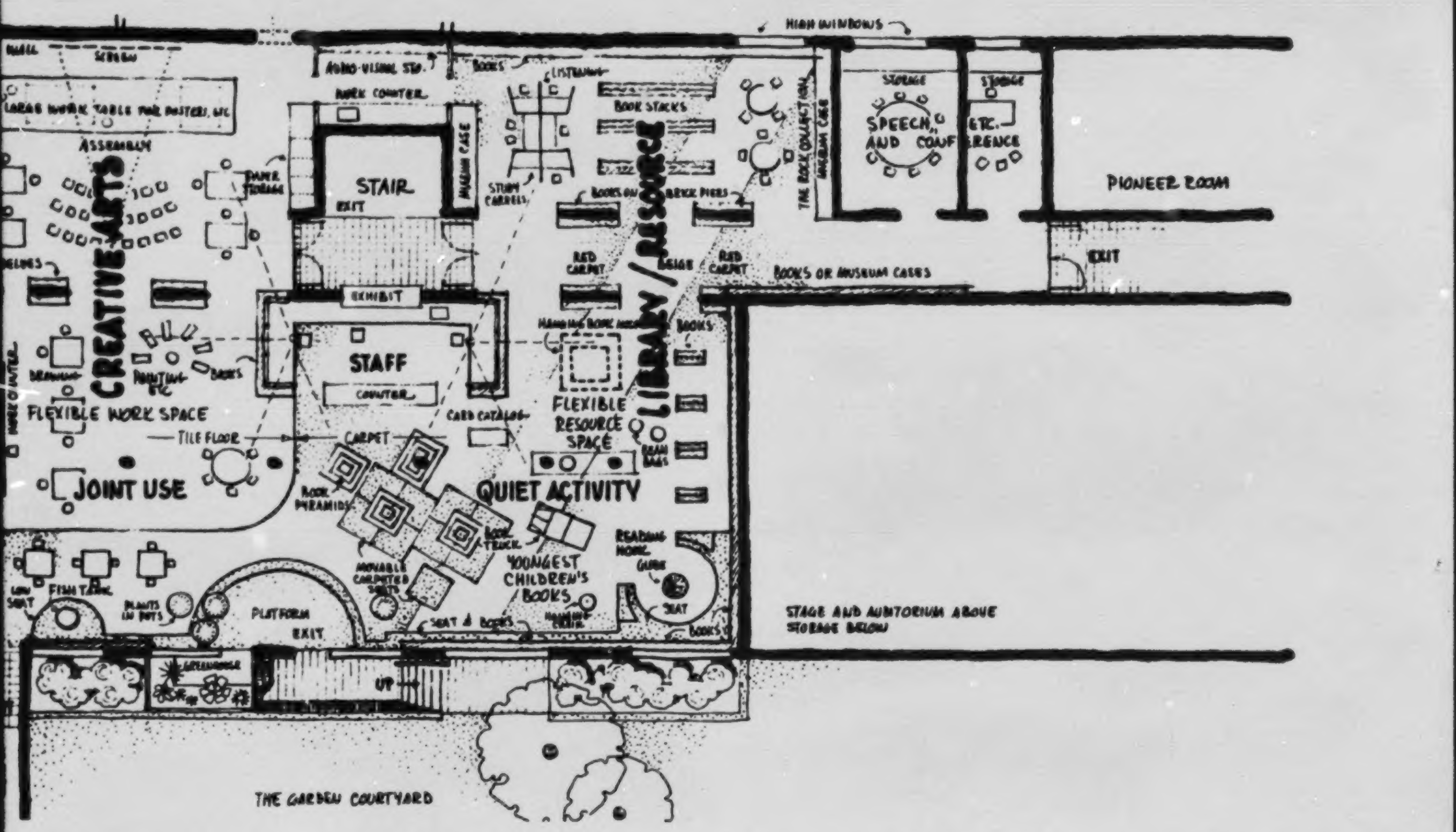
The space was designed for about 120 students and was planned to be a simple, natural kind of place which would stimulate their imaginations. The existing acoustical tile ceiling was removed to allow for greater head room and a fluorescent lighting system installed. The duct work and piping were color coded for easy student identification and to add color and variety to the space.

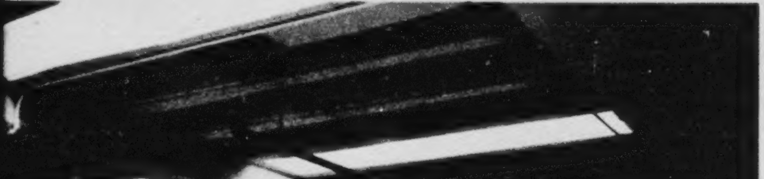
The resource center includes spaces for a variety of activities not regularly available in the classroom. It has been planned as an enjoyable, innovative environment that encourages children to explore individual interests.






CREATIVE ARTS STORAGE
EXHIBIT WALL
SCREEN
LARGE WORK TABLE FOR POSTERS, ETC.
ASSEMBLY
AUDIO-VISUAL STO.
WORK COUNTER
BOOKS
LISTENING
BOOK STACKS
HIGH WINDOWS
STORAGE
STORAGE
SPEECH AND CONFERENCE
ETC.
PION
TOOLS
EXHIBIT WALL
KILN
SHOP
SHOP TABLES
WORK BENCH
CREATIVE ARTS
PAPER STORAGE
STAIR
EXIT
MUSEUM CASE
STUDY CARRELS
BOOKS ON BRICK PIERS
LIBRARY / RESOURCE
THE ROCK COLLECTION
MUSEUM CASE
PROJECT SHELVES
RED CARPET
BRICK
RED CARPET
BOOKS OR MUSEUM CASES
EXIT
EXHIBIT
SCIENCE
SCIENCE TABLES
DRAWING
PAINTING ETC
BOOKS
STAFF
COUNTER
HANGING BOOK RACK
BOOKS
WORK COUNTER
EXHIBIT
FLEXIBLE WORK SPACE
TILE FLOOR
CARPET
CARD CATALOG
FLEXIBLE RESOURCE SPACE
BEAN BAGS
NOISY ACTIVITY
JOINT USE
BOOK PYRAMIDS
QUIET ACTIVITY
COOKING
BOOK TRUCK
READING NOOK
GLOBE
YOUNGEST CHILDREN'S BOOKS
MOVABLE CARPETED SEATS
SEAT
PHOTO BENCH
LOW SEAT
FISH TANK
PLANTS IN POTS
PLATFORM
EXIT
SEAT & BOOKS
TOILET
TOILET
DARK ROOM
GREENHOUSE
UP
EXIT
STAIR UP
STAGE AND AUDITORIUM ABOVE
STORAGE BELOW
THE GARDEN COURTYARD


HIGH WINDOWS
WALL
SCREEN
AUDIO-VISUAL STO.
BOOKS
LISTENING
WORK COUNTER
LARGE WORK TABLE FOR POSTERS, ETC
BOOK STACKS
ASSEMBLY
MUSEUM CASE
STAIR
EXIT
PAPER STORAGE
STUDY CARRELS
BOOKS ON BRICK PIERS
THE ROCK COLLECTION
MUSEUM CASE
STORAGE
SPEECH, ETC. AND CONFERENCE
PIONEER ROOM
CREATIVE ARTS
LIBRARY / RESOURCE
RED CARPET
BEIGE
RED CARPET
BOOKS OR MUSEUM CASES
EXIT
SHELVES
EXHIBIT
HANGING BOOK RACK
BOOKS
STAFF
COUNTER
DRAWING
PAINTING ETC
BOOKS
WORK COUNTER
FLEXIBLE WORK SPACE
CARD CATALOG
FLEXIBLE RESOURCE SPACE
BEAN BAGS
TILE FLOOR
CARPET
JOINT USE
BOOK PYRAMIDS
QUIET ACTIVITY
BOOK TRUCK
READING NOOK
GLOBE
YOUNGEST CHILDREN'S BOOKS
MOVABLE CARPETED SEATS
SEAT
LOW SEAT
FISH TANK
PLANTS IN POTS
PLATFORM
EXIT
SEAT & BOOKS
HANGING CHAIR
BOOKS
STAGE AND AUDITORIUM ABOVE
STORAGE BELOW
GREENHOUSE
UP
THE GARDEN COURTYARD

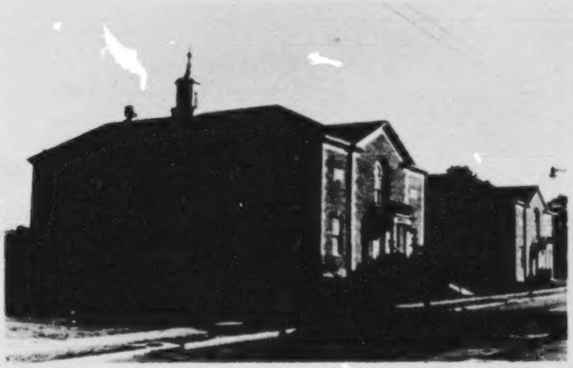


122

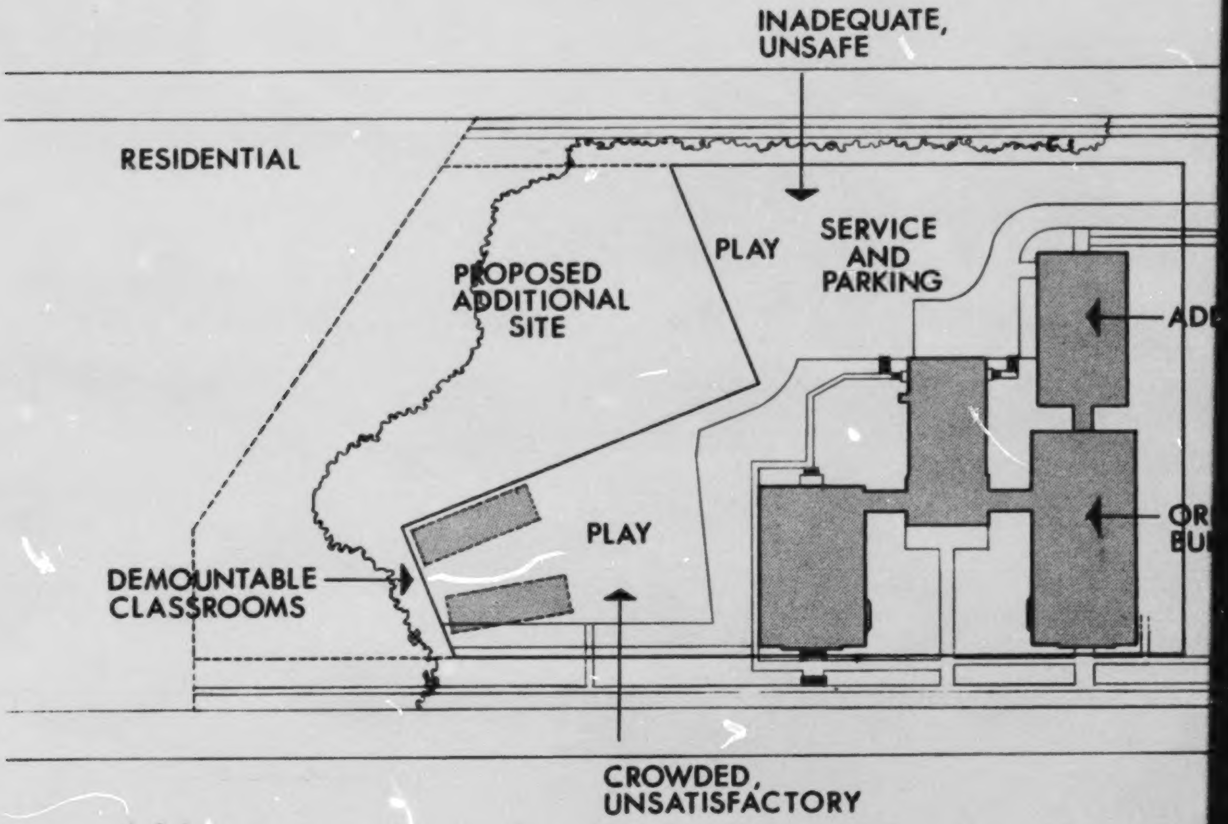
123

Langdon Elementary School
Washington, D.C.

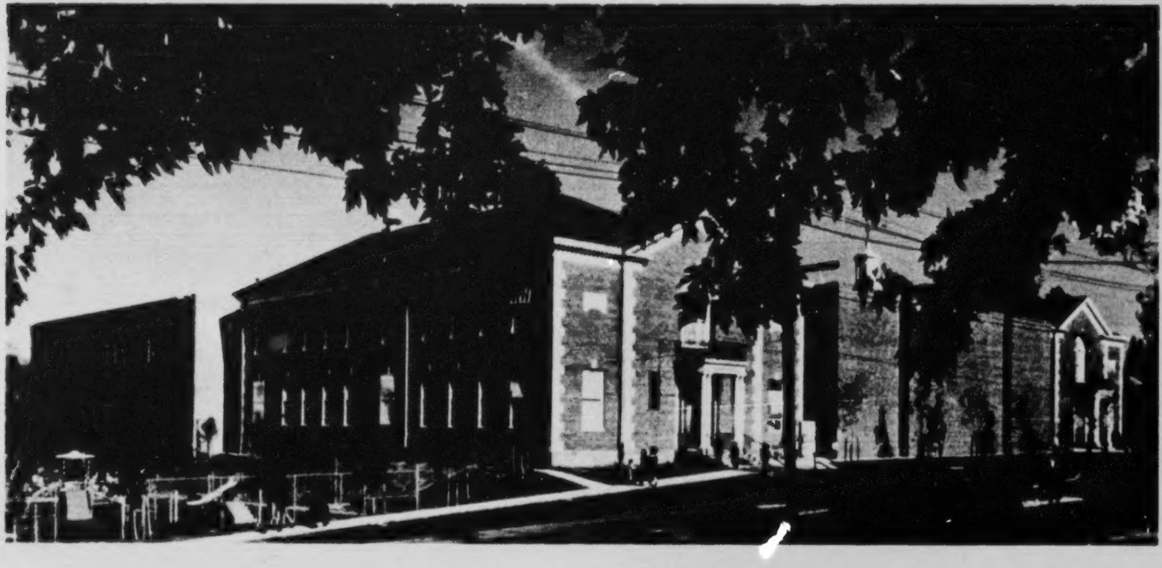
Vincent E. Reed, Interim Superintendent
Chapman & Miller, Architects



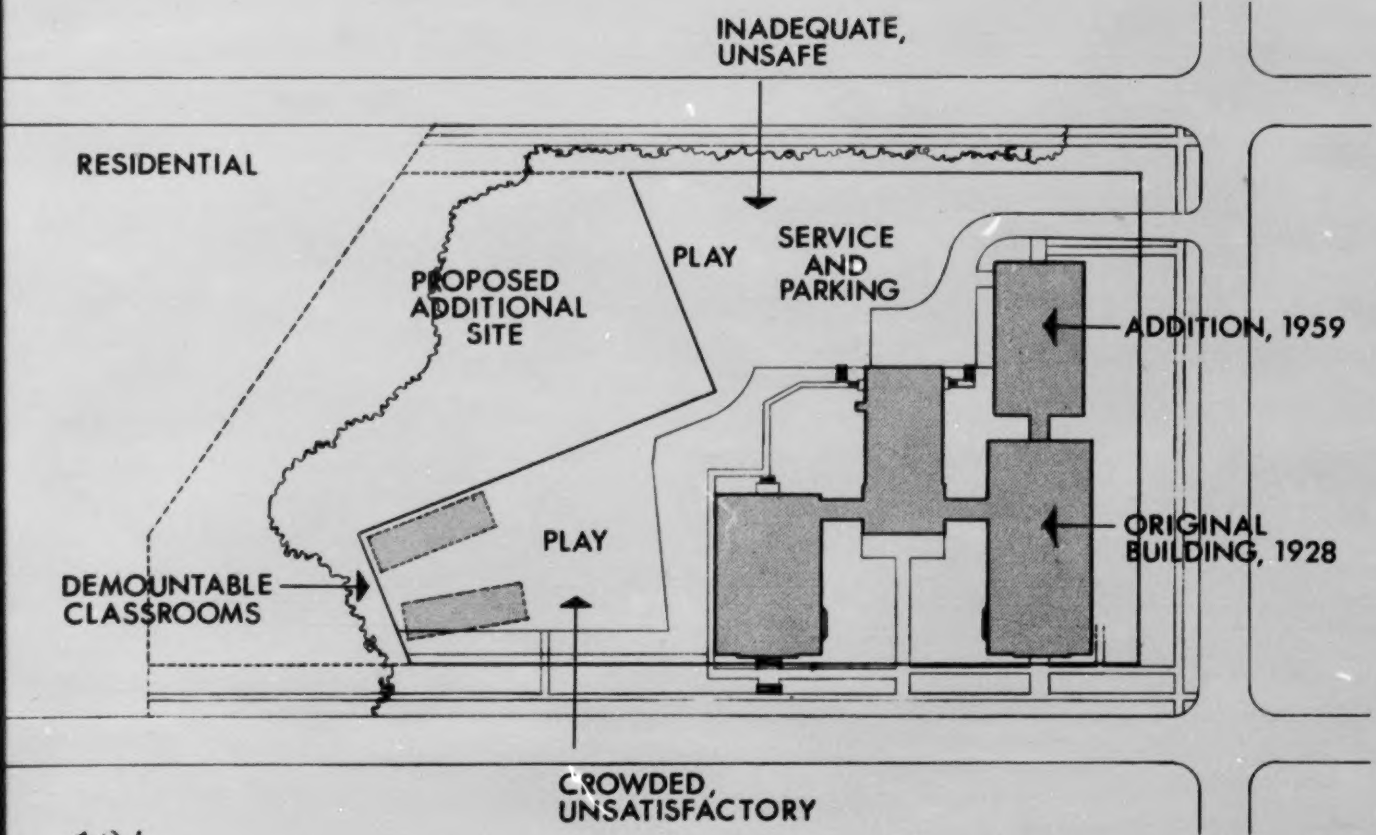
Existing Conditions


INADEQUATE, UNSAFE
RESIDENTIAL
PLAY
SERVICE AND PARKING
PROPOSED ADDITIONAL SITE
ADD
PLAY
DEMOUNTABLE CLASSROOMS
OR
BU
CROWDED, UNSATISFACTORY

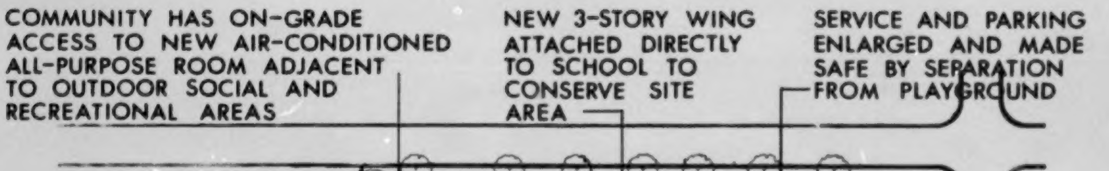
perintendent
ts



ting Conditions


INADEQUATE, UNSAFE
RESIDENTIAL
PLAY
SERVICE AND PARKING
PROPOSED ADDITIONAL SITE
ADDITION, 1959
ORIGINAL BUILDING, 1928
PLAY
DEMOUNTABLE CLASSROOMS
CROWDED, UNSATISFACTORY

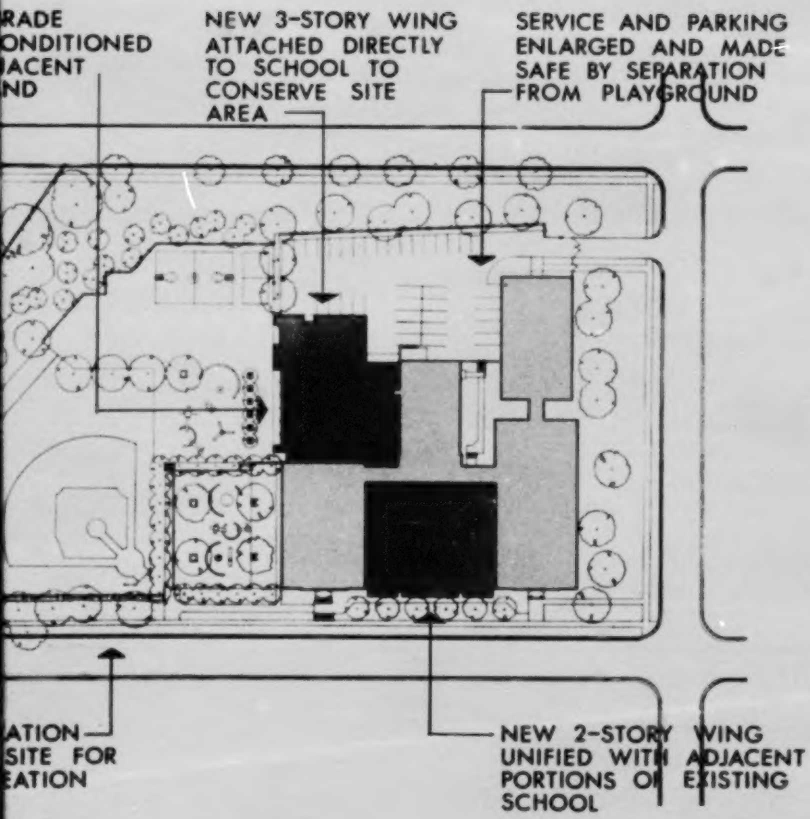
Solution Adopted


COMMUNITY HAS ON-GRADE ACCESS TO NEW AIR-CONDITIONED ALL-PURPOSE ROOM ADJACENT TO OUTDOOR SOCIAL AND RECREATIONAL AREAS
NEW 3-STORY WING ATTACHED DIRECTLY TO SCHOOL TO CONSERVE SITE AREA
SERVICE AND PARKING ENLARGED AND MADE SAFE BY SEPARATION FROM PLAYGROUND
MAXIMUM UTILIZATION OF ADDITIONAL SITE FOR PLAY AND RECREATION
NEW 2-STORY WING UNIFIED WITH ADJACENT PORTIONS OF EXISTING SCHOOL

A common problem in u
old, traditional-plan schools
sites. This was the case with
Langdon Elementary. The o
facility (plus a 1960 addition
site. When an increased stud
dictated expansion, an additi
was acquired for the project
to conserve as much land as
new addition was divided an
within the geometry of the e

Langdon illustrates sev
of closely related additions o
"tacked on" or dispersed, as
earlier 1960 program. There
reduction of perimeter walls
48,000 square feet of new sp
perimeter walls with the add
before the space was added.
benefit is the reduction of h
use and heat gain for summ
required no increase in boile
despite the large areas adde
heating requirements. The
loads for the new spaces and
areas were reduced as a resu
reduction in perimeter wall

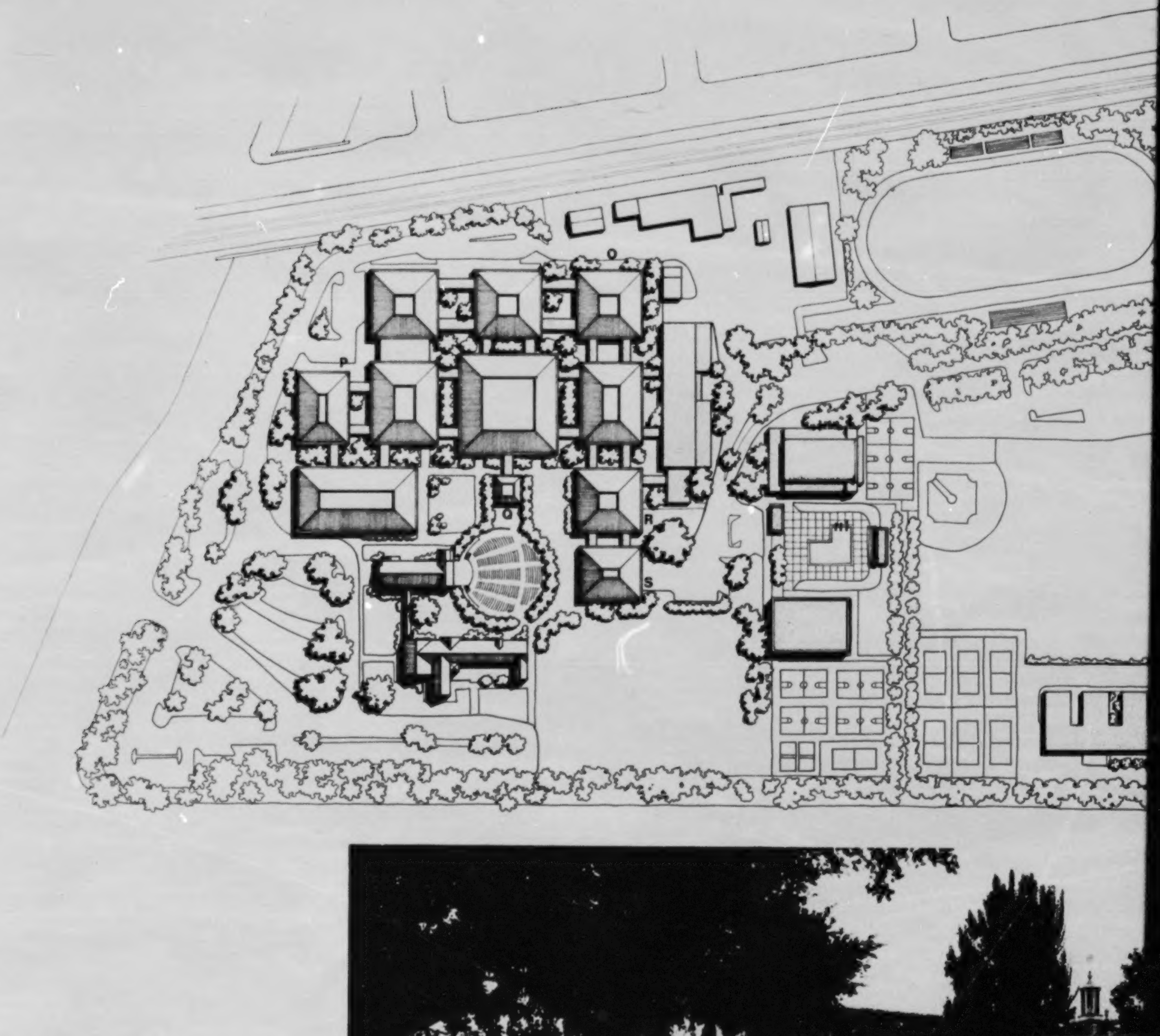
Other benefits from us
and windows as dividers be
new spaces are reduction in
and replacement, and the fa
portions of the older surfac
desirable architectural trans
old and new.


RADE
ONDITIONED
JACENT
ND
NEW 3-STORY WING ATTACHED DIRECTLY TO SCHOOL TO CONSERVE SITE AREA
SERVICE AND PARKING ENLARGED AND MADE SAFE BY SEPARATION FROM PLAYGROUND
ATION
SITE FOR
EATION
NEW 2-STORY WING UNIFIED WITH ADJACENT PORTIONS OF EXISTING SCHOOL

A common problem in urban areas is old, traditional-plan schools on minimum sites. This was the case with Washington's Langdon Elementary. The original 1930 facility (plus a 1960 addition) is on 2.4 acre site. When an increased student population dictated expansion, an additional 1.4 acres was acquired for the projected facility, and to conserve as much land as possible, the new addition was divided and integrated within the geometry of the existing building.

Langdon illustrates several advantages of closely related additions over those "tacked on" or dispersed, as was done in the earlier 1960 program. There's the obvious reduction of perimeter walls. Langdon with 48,000 square feet of new space has less total perimeter walls with the addition than it had before the space was added. A positive benefit is the reduction of heat loss for winter use and heat gain for summer use. Langdon required no increase in boiler room capacity despite the large areas added to the total heating requirements. The air-conditioning loads for the new spaces and contiguous areas were reduced as a result of overall reduction in perimeter wall length.

Other benefits from using existing walls and windows as dividers between old and new spaces are reduction in demolition work and replacement, and the fact that selected portions of the older surfaces can produce desirable architectural transitions between old and new.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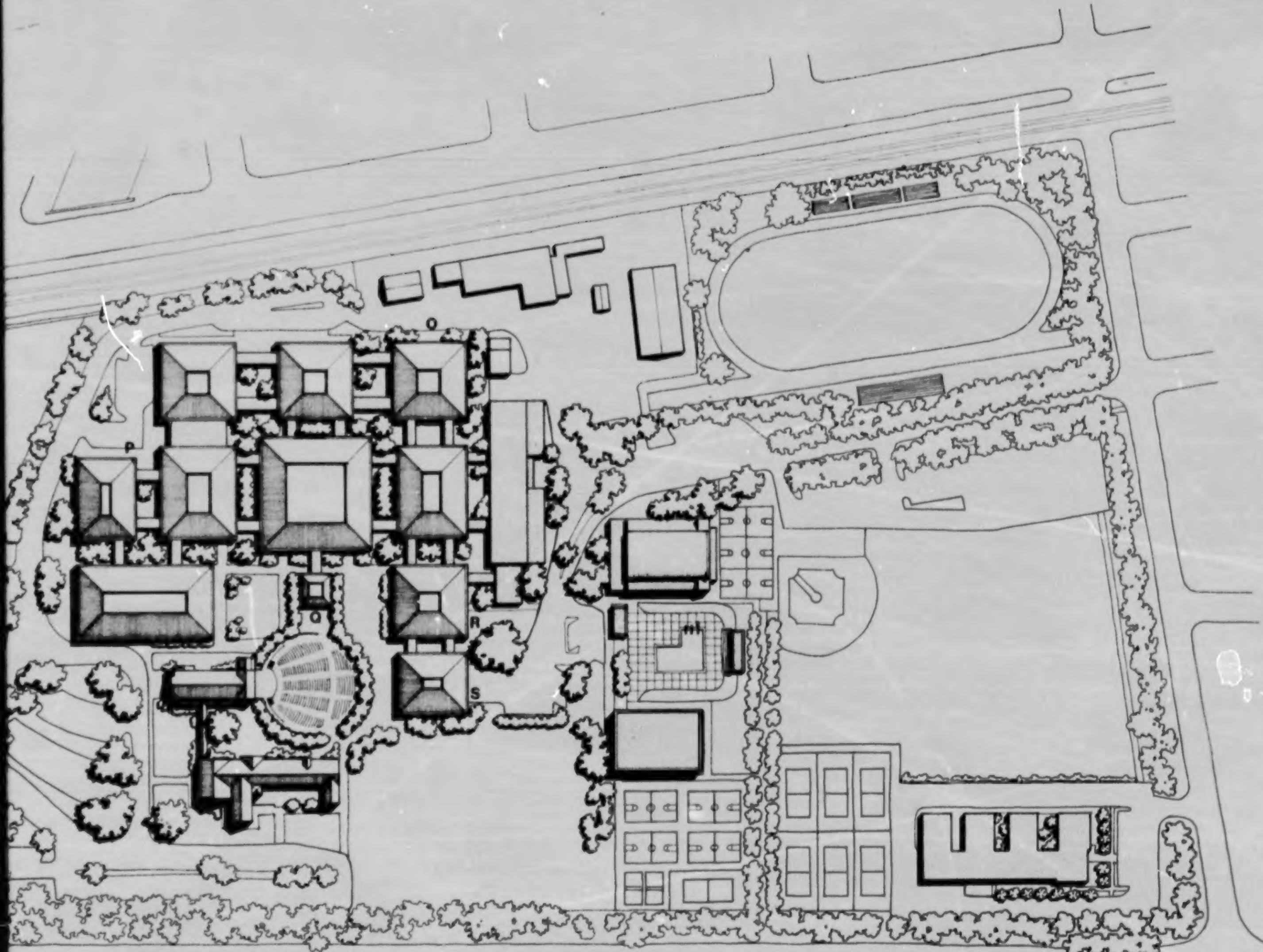
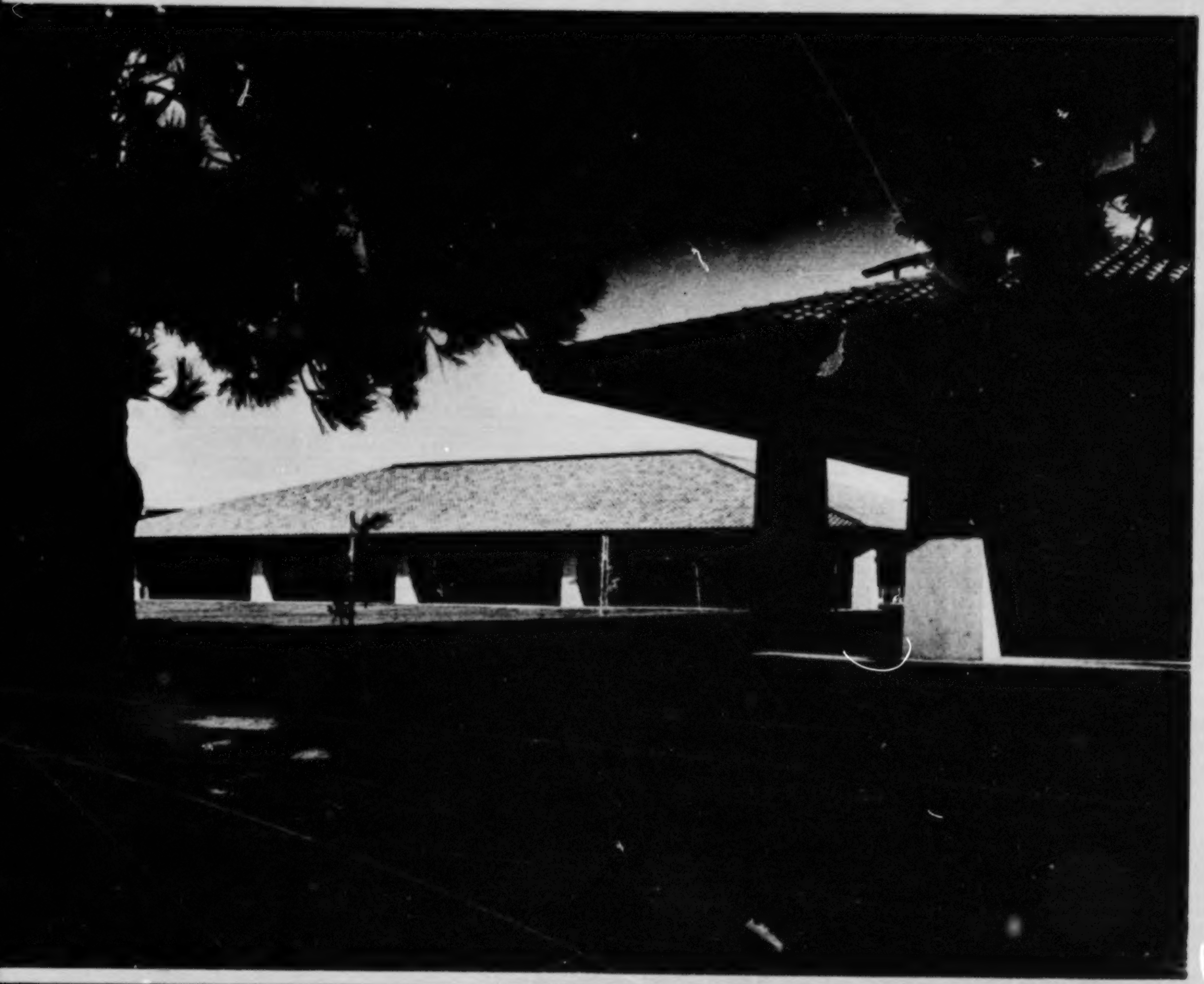


129

128



Palo Alto High School
Palo Alto, California

Newman Walker, Superint
Reid & Tarics Associates, A

New addition to a well
school built around 1920. A
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construction, the desire to c
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"Eminent example of
facility with an old to accor
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Use of traditional mat
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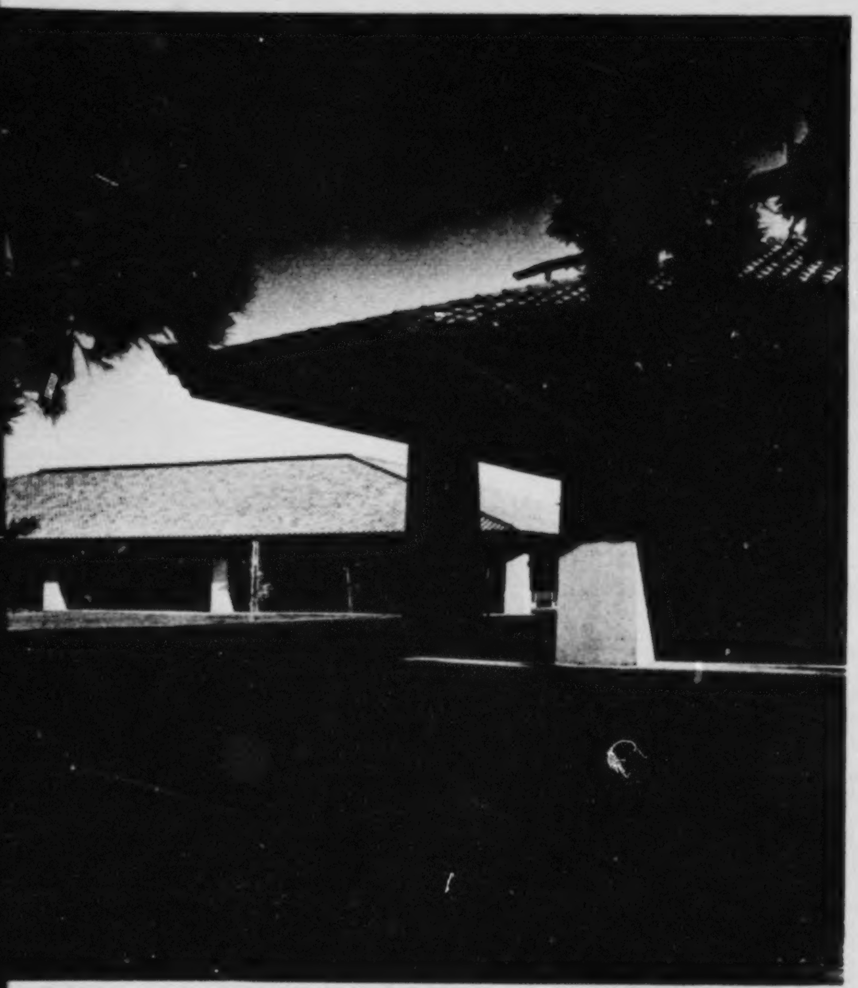

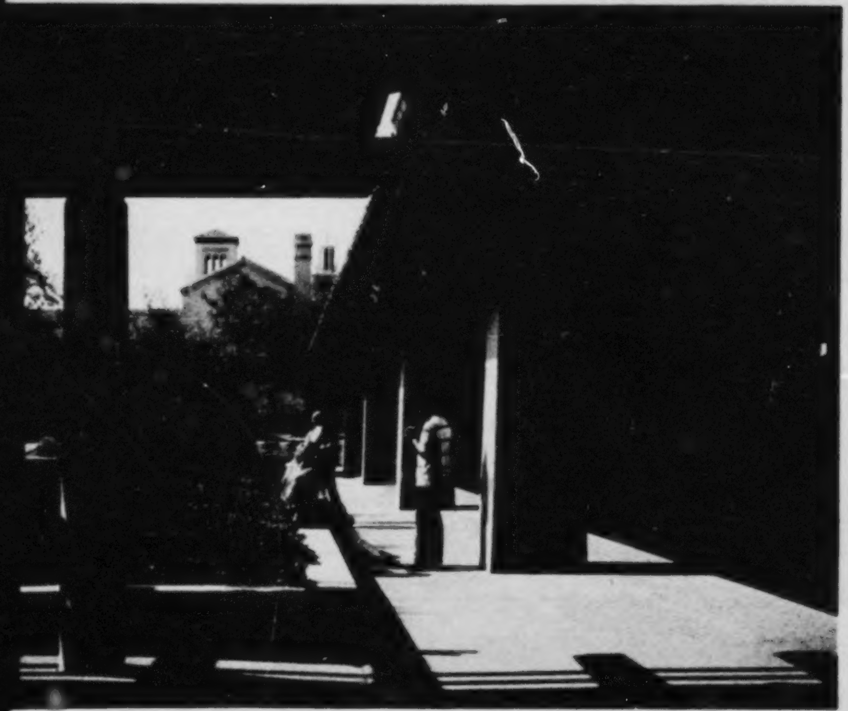

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Palo Alto High School

Palo Alto, California

Newman Walker, Superintendent
Reid & Tarics Associates, Architects

New addition to a well established high school built around 1920. Although the need to replace buildings for seismic safety was the underlying motivation for new construction, the desire to develop a contemporary educational program using old and new facilities became the goal of administrators, teachers, and students. The jury for the 1973 AASA Exhibition of School Architecture believed that this project did indeed achieve these goals and presented it with the Shirley Cooper Award commenting:

"Eminent example of combining a new facility with an old to accommodate a changing educational program.

Use of traditional materials in a contemporary expression creates a distinctive and refreshing blend of old and new. The new is compatible with the old without being trite or flamboyant—a great mix that is very well 'stirred.' The total environment is informal, delightful, and motivating. It is simple and refined in detail—non-focal-point architecture reflecting disciplined continuity, devoid of monotony. The school exemplifies warm excitement and an affectionate understanding of the people it serves."

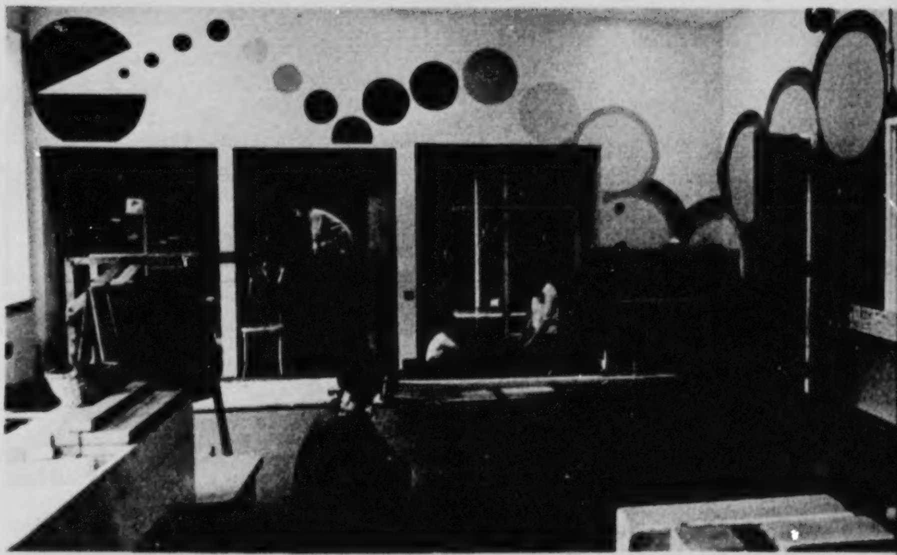
131

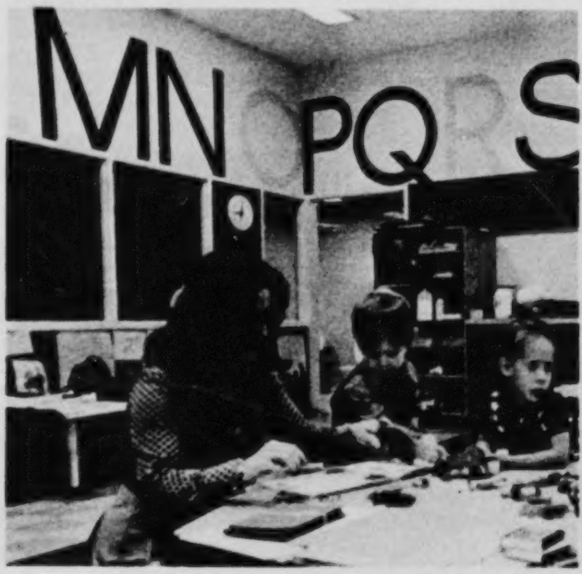
Children's School
Carnegie-Mellon University
Pittsburgh, Pennsylvania

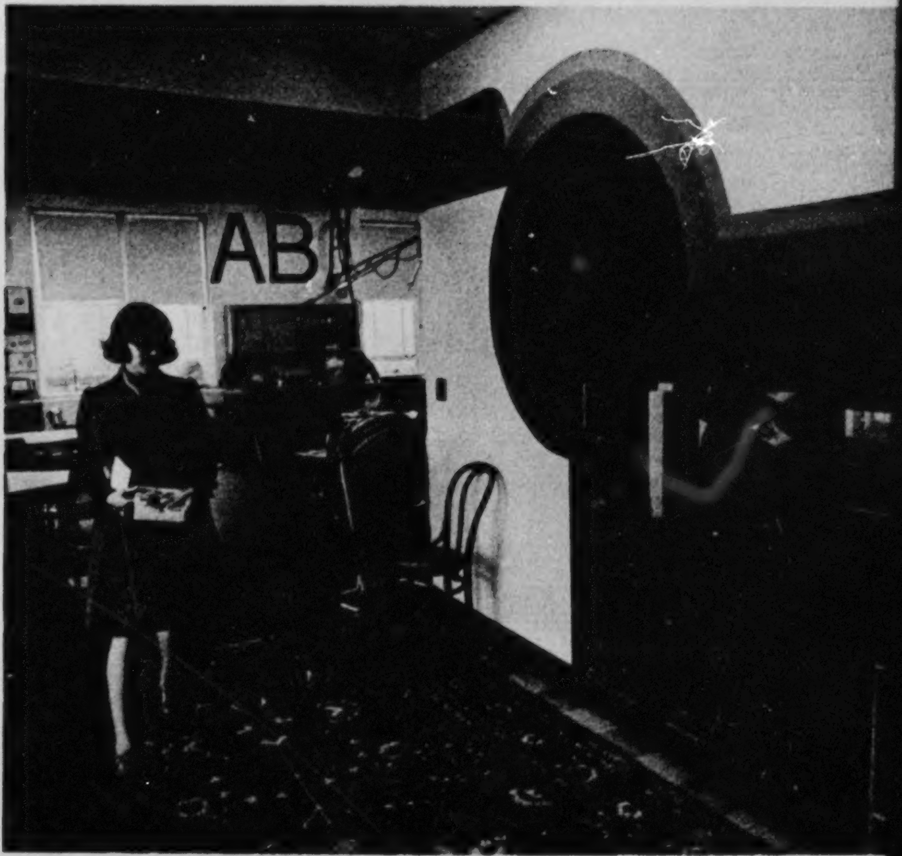
Ann Baldwin Taylor, Director
Nina Selinsky, Designer

The Children's School today is a product of many years of evolution. Prior to 1969 the school was used solely for observation by students in child development classes. A grant from the Esso Educational Foundation permitted a sound system to be installed in the observation booth and the expanded facility was used as an inservice training base for teachers and a school for 3, 4 and 5-year-olds.

The 1975 environmental teaching design project reflects a growing understanding of the enormous importance of individual motivation and curiosity in learning. It was believed that the best learning environment for children is one that is comfortable, stimulating, orderly, free and friendly. This project, though small and modest, is a good example of re-creating a learning environment through teaching design and graphics.







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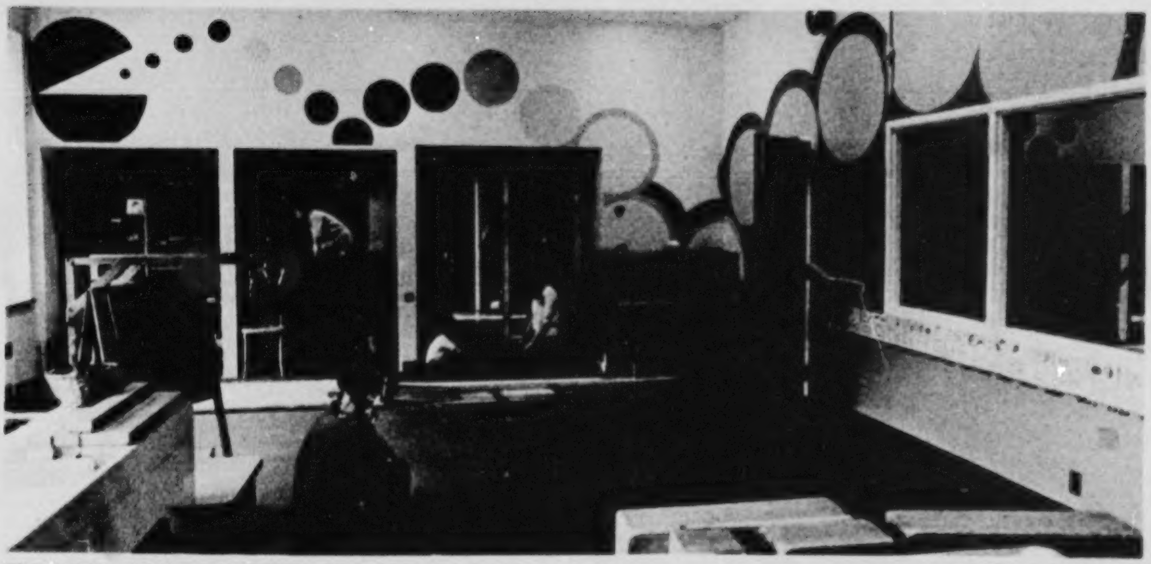
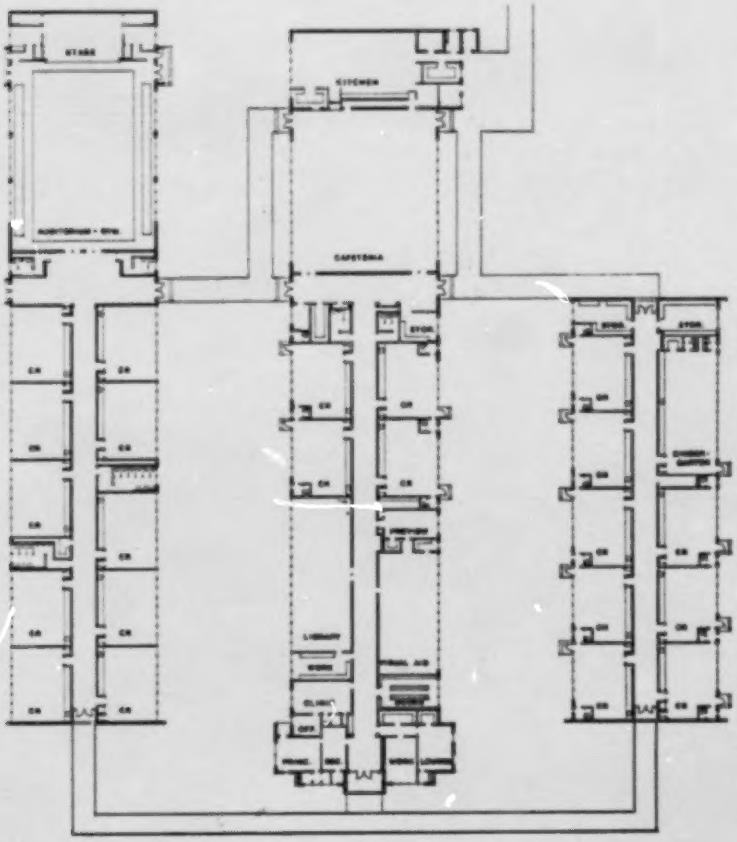


Jones Elementary School
Stafford, Texas

Lawrence Elkins, Superintendent
Simmons, Cavitt, McKnight, Weymouth,
Architects

Existing Plan


STAGE
KITCHEN
AUDITORIUM - GYM
CAFETERIA
CR
STOR
LIBRARY
WORK
CLINIC

Jones Elementary, built i
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covered walks. Each wing ha
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window walls. Between the v
seventy foot grass areas.

The remodeling program
additional space and open tea
The spaces between the three
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corridors and the classrooms
of these corridors were conv
purposes such as music, art a
The corridor in the middle w
retained as a divider between
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Ceilings in some existin
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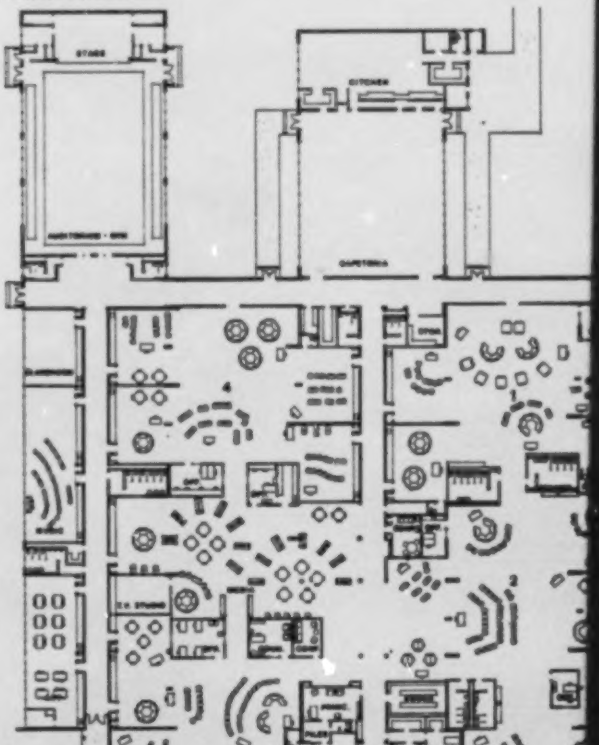
learning environment.

Remodeled Plan


STAGE
KITCHEN
AUDITORIUM - GYM
CAFETERIA

ident
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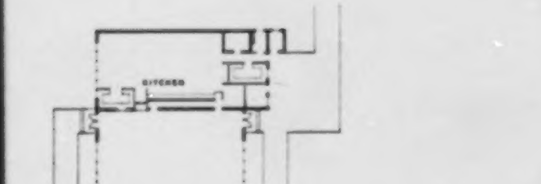
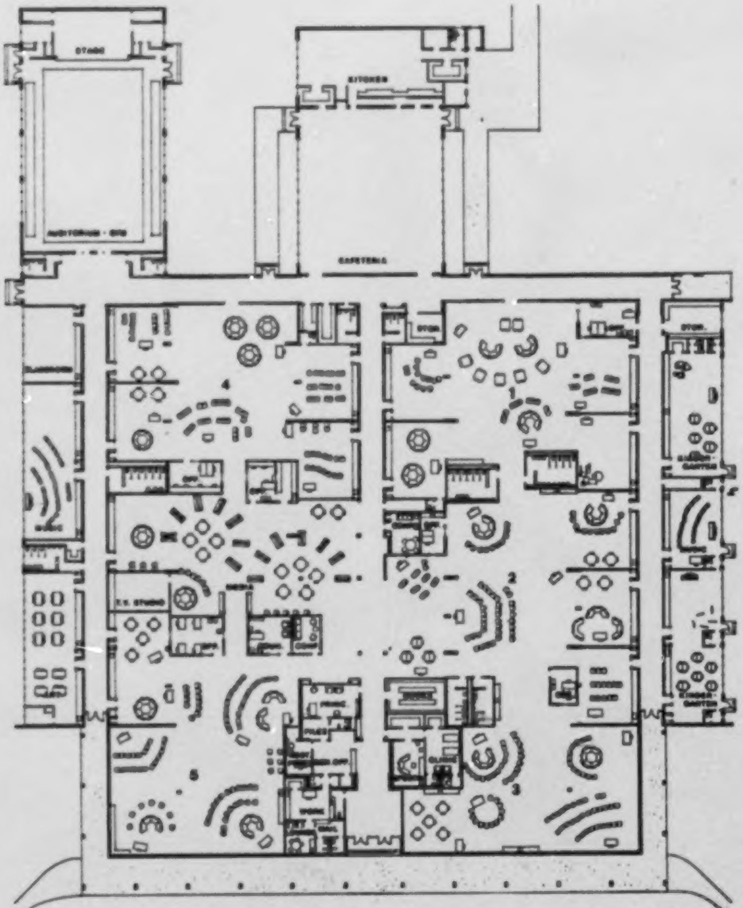


Jones Elementary, built in 1953-54, consisted of three buildings connected by covered walks. Each wing had a central corridor, with long narrow classrooms and window walls. Between the wings were seventy foot grass areas.

The remodeling program called for additional space and open teaching areas. The spaces between the three buildings were enclosed and a cross bar added across the south of the buildings. The central corridors in the two flanking buildings remained as corridors and the classrooms on the outside of these corridors were converted for special purposes such as music, art and kindergarten. The corridor in the middle wing was partially retained as a divider between two of the grade pods.

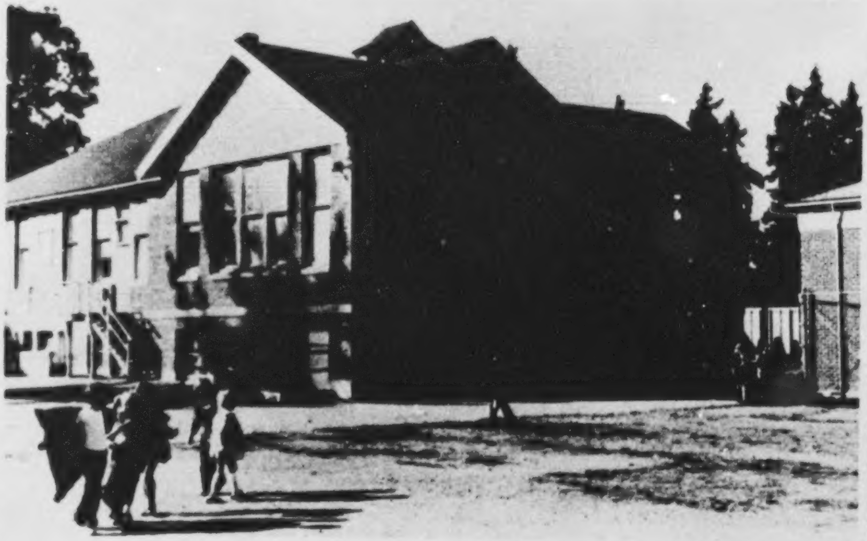
Ceilings in some existing areas were lowered for air conditioning ducts, while those in the new areas were raised. This play of ceiling height and the variety of space size, color and material create a lively new learning environment.

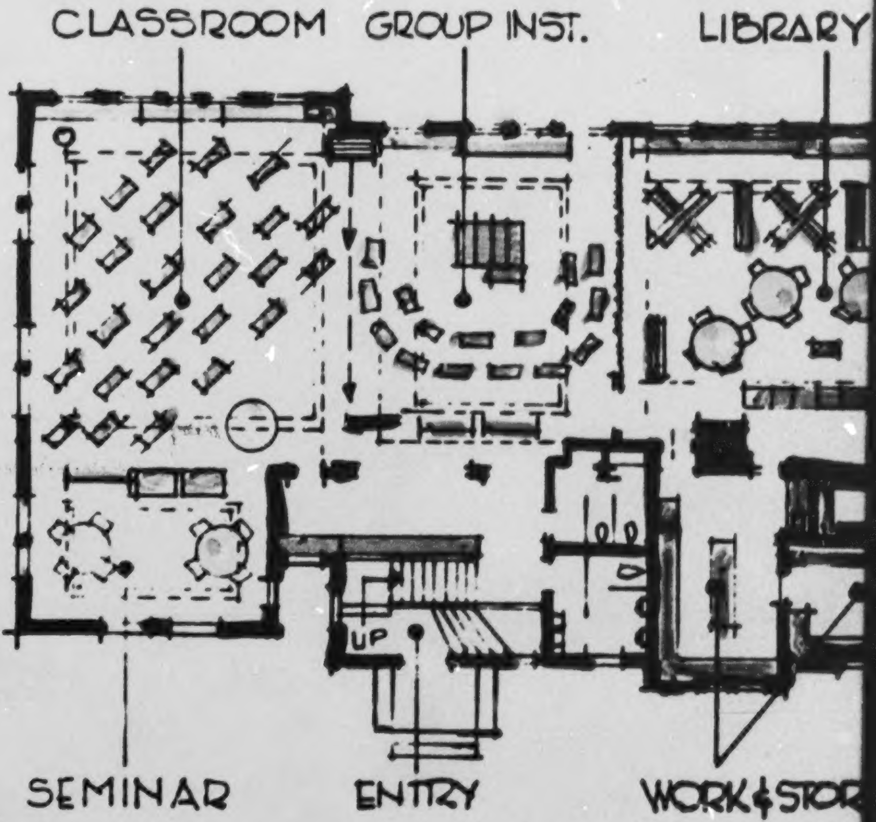
Remodeled Plan



Lake City Elementary School
Lakewood Center, Washington

Robert L. Chisholm, Superintendent
Rue & Butler, Architects




CLASSROOM
GROUP INST.
LIBRARY
UP
SEMINAR
ENTRY
WORK & STOR

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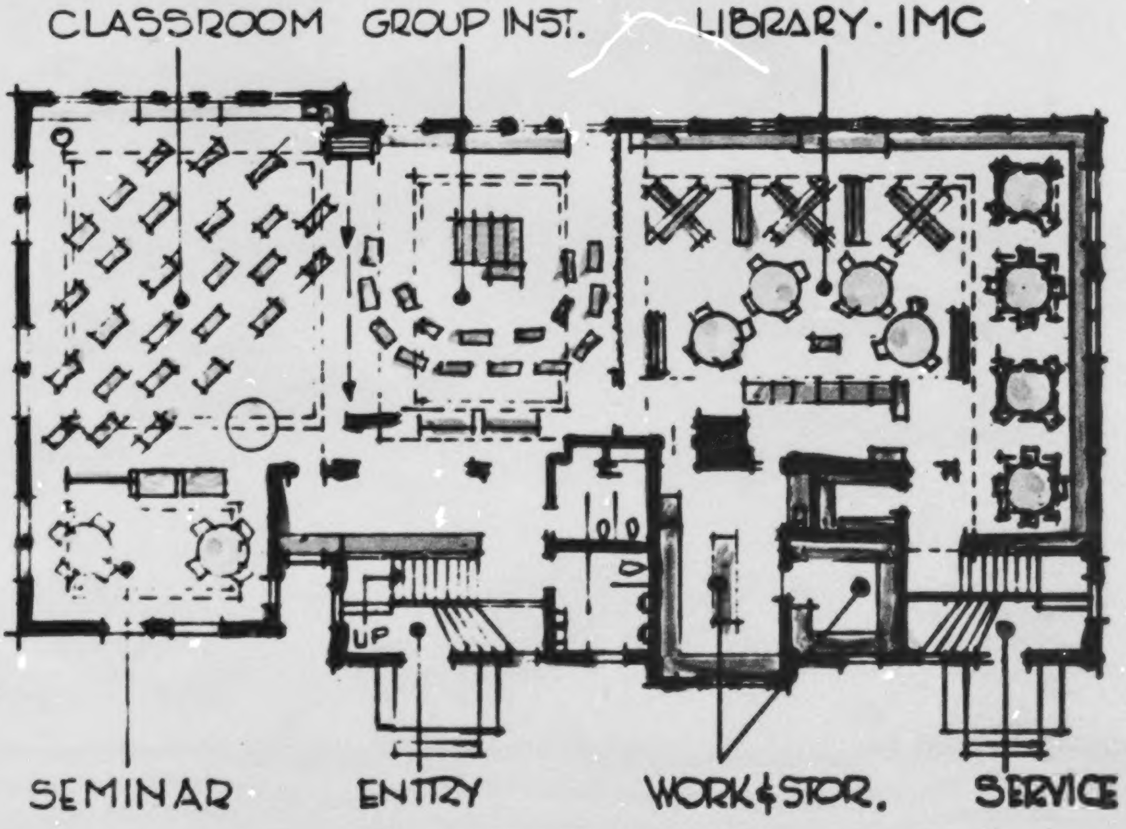
CLASSROOM
GROUP INST.
LIBRARY · IMC
UP
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SERVICE

Lake City Elementary S
originally the only school in
District. It is uncertain whe
two-story, four-room struct
it burned to its foundations
The existing larger school w
original foundation in 1912.
by William Russell, architec
The school district is still in
original blueprints. A son a
the architect who live in the
Admiral James Russell and
Mace, were among those w
instrumental in saving the b
demolition.

The future of the old b
under study and discussion
Finally, in late January 197
made to remodel in prepara
school instructional materia
group instruction space.

The new library/IMC
original building a new leas
full life. It will continue to
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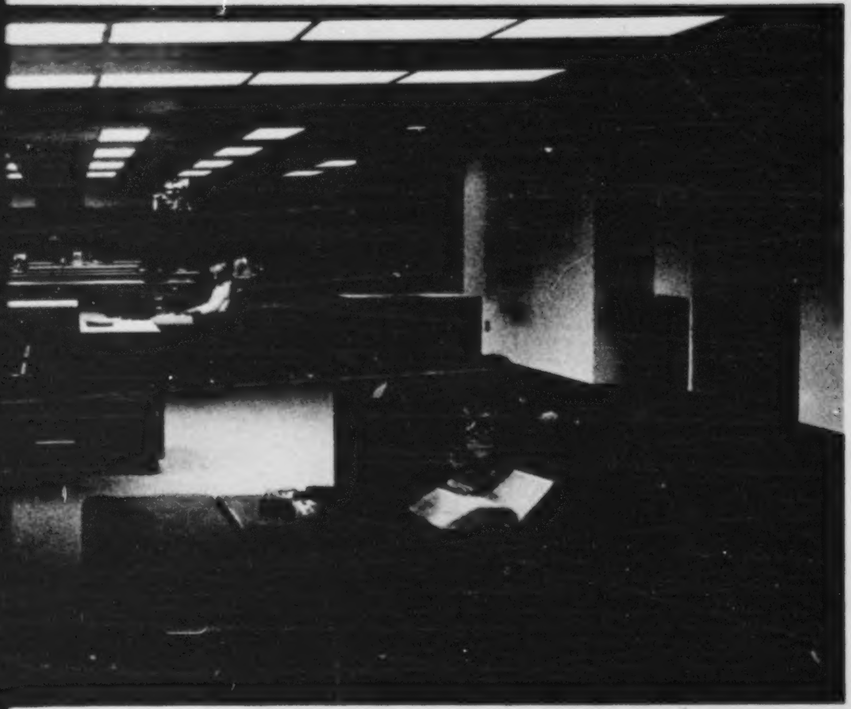
without interruption for th
Principal Walter Ball and h
with the architects and othe
throughout the re-creation
valuable assistance from in
use.



Lake City Elementary School was originally the only school in the Lakes District. It is uncertain when the original two-story, four-room structure was built, but it burned to its foundations in about 1911. The existing larger school was built on the original foundation in 1912. It was designed by William Russell, architect, from Tacoma. The school district is still in possession of the original blueprints. A son and daughter of the architect who live in the area today, Admiral James Russell and Mrs. Margaret Mace, were among those who were instrumental in saving the building from demolition.

The future of the old building has been under study and discussion for many years. Finally, in late January 1974 the decision was made to remodel in preparation for an all-school instructional materials center and group instruction space.

The new library/IMC has given the original building a new lease on its long and full life. It will continue to serve the rest of the school and the community as it has without interruption for the past 63 years. Principal Walter Ball and his staff worked with the architects and other planners throughout the re-creation process and gave valuable assistance from inception to present use.

Mack School
Ann Arbor, Michigan

Harry Howard, Superintend
Urban Design Associates, A

Old Mack School, a fo
neighborhood, retains its se
but has been re-created into
center for people of all ages
cultural, and educational ne
tion and recreation wings h
and there are linkages to se
The complex includes, in ad
elementary classrooms, com
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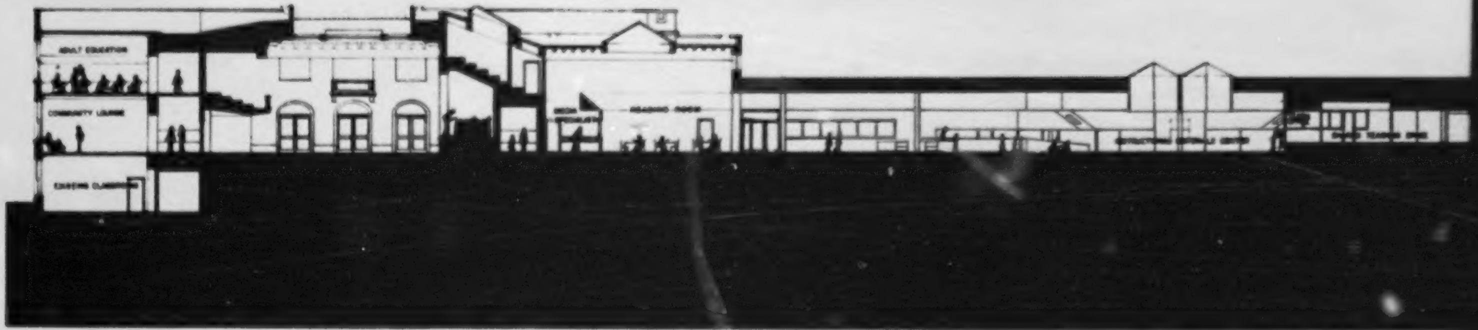
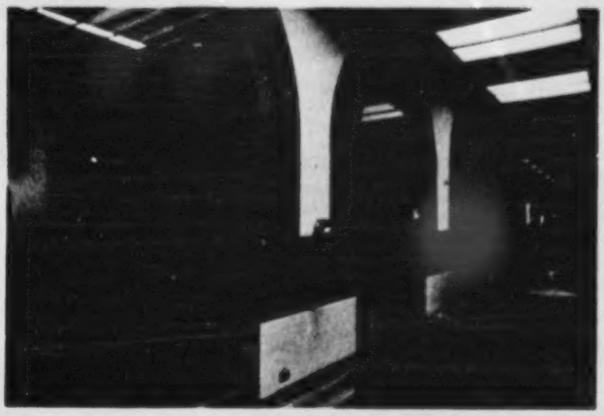
rooms; community college
education; dental clinic, sw
and parking facilities. You
participate, contribute, and


ADULT EDUCATION
COMMUNITY LOUNGE
EXISTING CLASSROOMS
READING ROOM

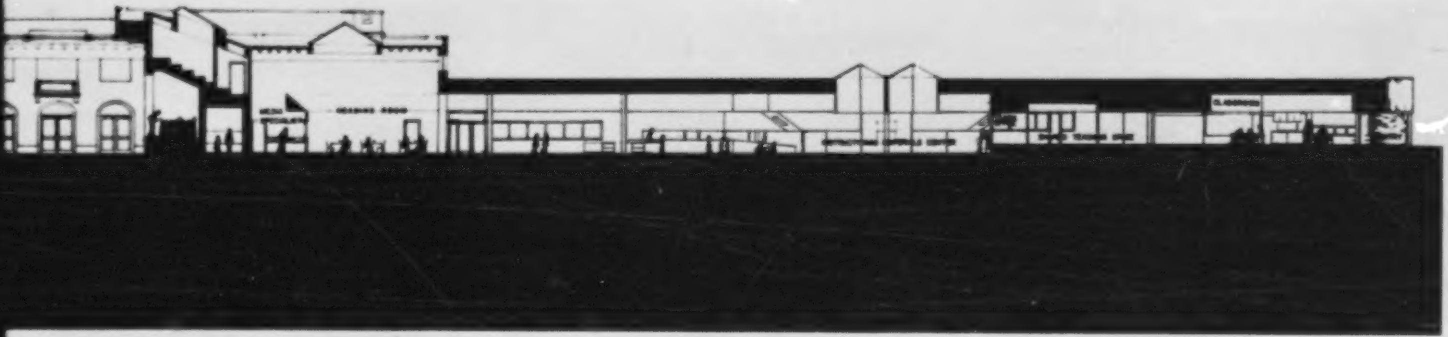


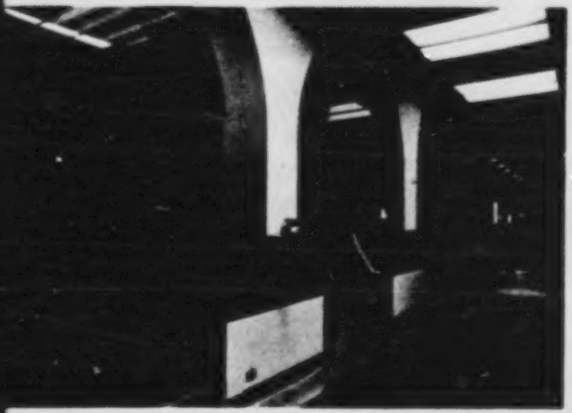
Mack School

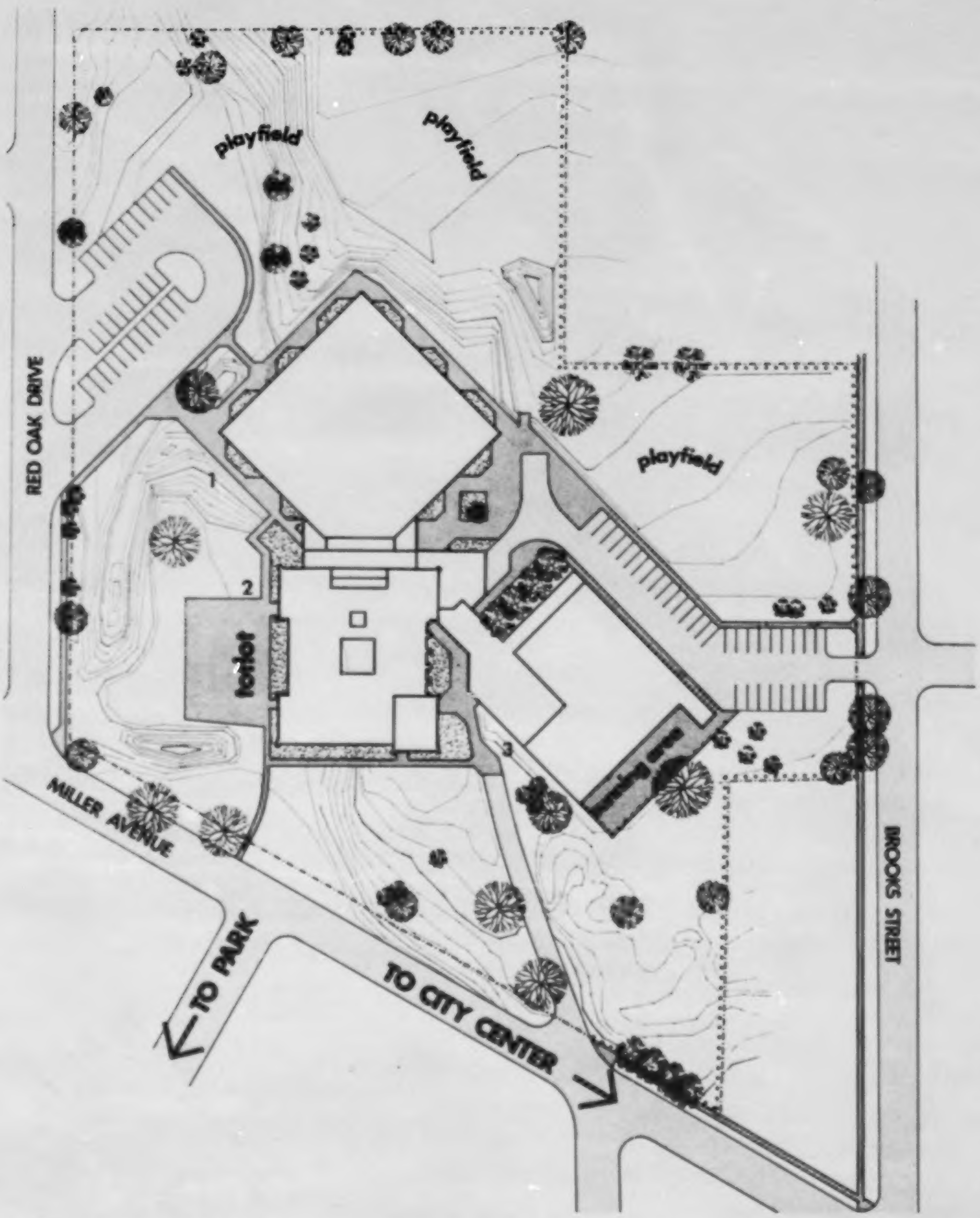
Ann Arbor, Michigan

Harry Howard, Superintendent
Urban Design Associates, Architects

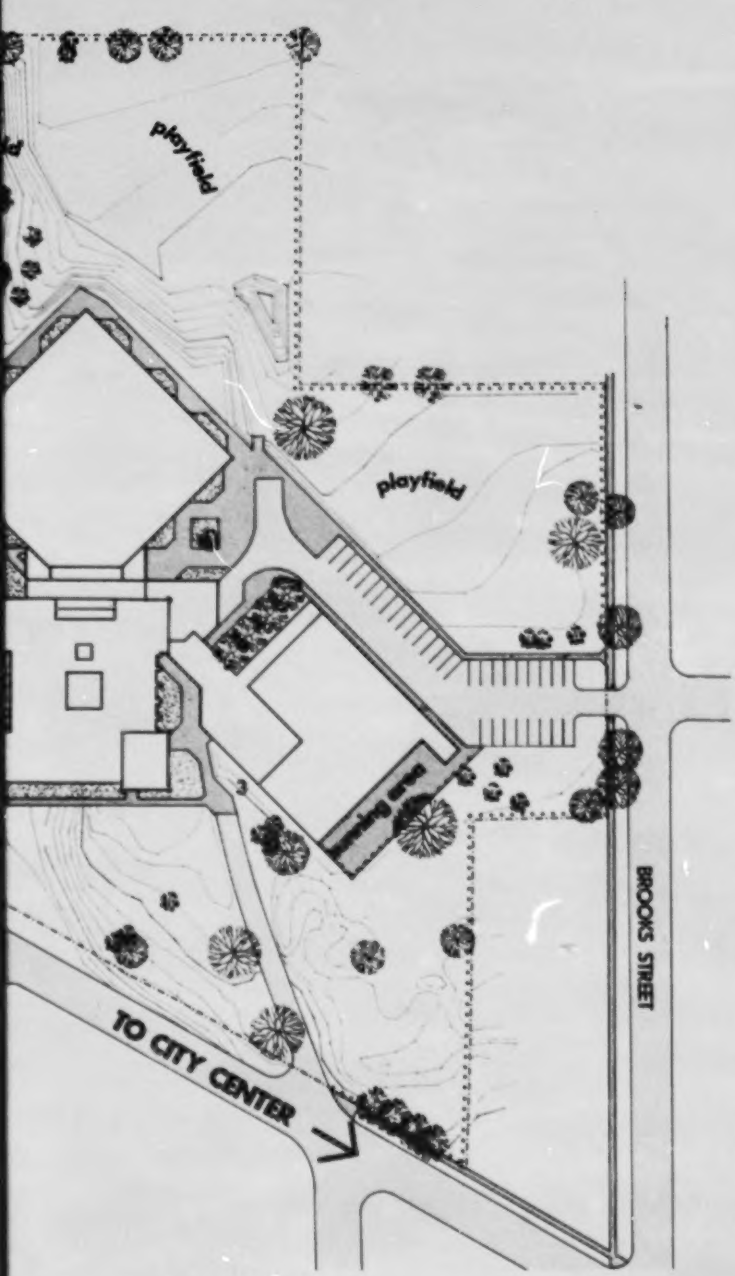
Old Mack School, a focal point in the neighborhood, retains its sentimental appeal, but has been re-created into a community center for people of all ages, serving social, cultural, and educational needs. New education and recreation wings have been added and there are linkages to several local parks. The complex includes, in addition to elementary classrooms, community auditorium, lounge, art rooms and music rooms; community college and other adult education; dental clinic, swiming pool, locker and parking facilities. Young and old participate, contribute, and make new friends.






playfield
playfield
playfield
RED OAK DRIVE
1
2
totlot
3
MILLER AVENUE
TO PARK
TO CITY CENTER
BROOKS STREET

1. New teaching wing is the community education center.
2. Existing school converted to community center for social services and community college.
3. New community recreation center.

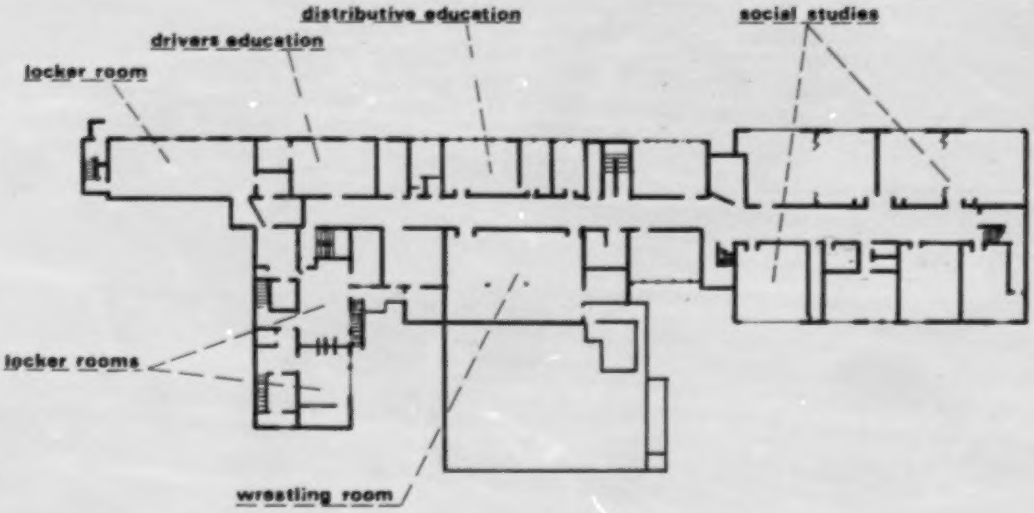

playfield
playfield
3
BROOKS STREET
TO CITY CENTER

1. New teaching wing is the community education center.
2. Existing school converted to community center for social services and community college.
3. New community recreation center.

Career Enrichment Park
Westminster, Colorado

Iver C. Ramum, Superintendent
Roland M. Johnson & Associates and
William Blurock & Partners, Architects

Before


distributive education
social studies
drivers education
locker room
locker rooms
wrestling room

The construction of a n
made the old high school av
recycling and the local scho
to turn the old campus into
Westminster Enrichment Pa
point opportunity for distric
new center was needed as a
vocational education for stu
of the district's high schools
enrichment courses, an alter
without walls, and an adult
community recreation cente

Physical and money pr
typical. Over the years the
had grown into an assortme
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times and in several differen
renovation had to be accom
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As a result, few major
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were included. The empha
reorganizing existing space,
spaces and entries where re
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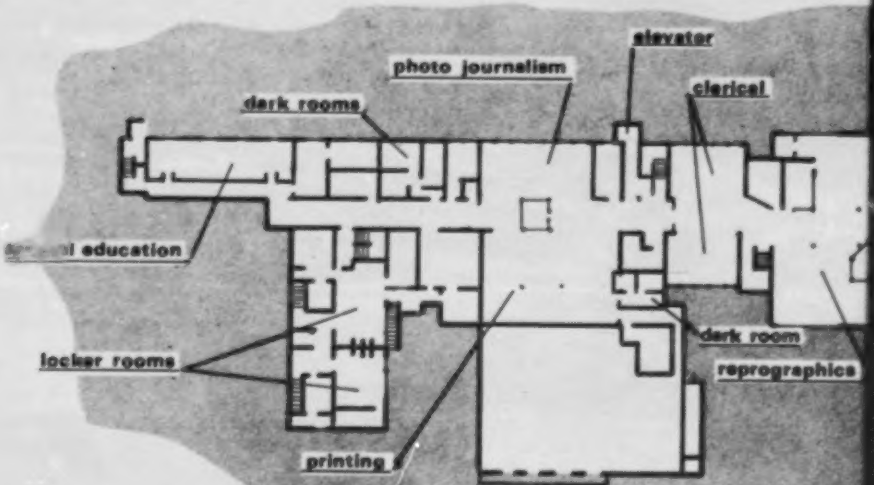
which would both restore a
and tie disparate building a
together.

After


elevator
photo journalism
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dark rooms
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locker rooms
dark room
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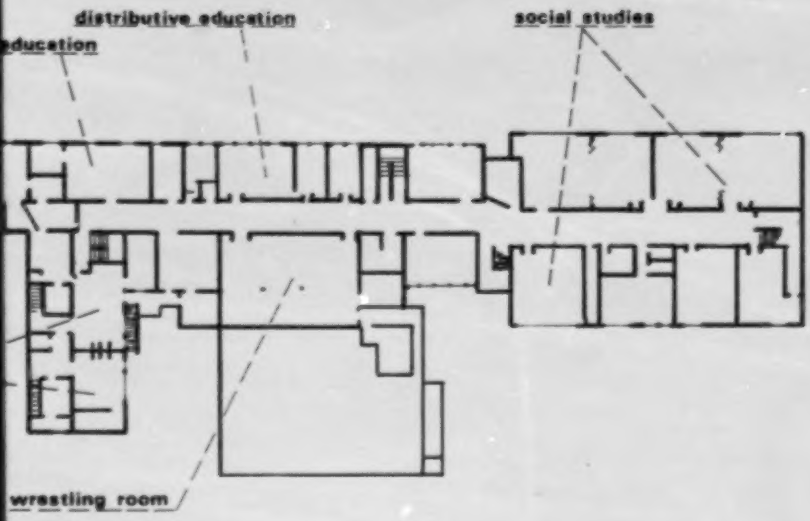
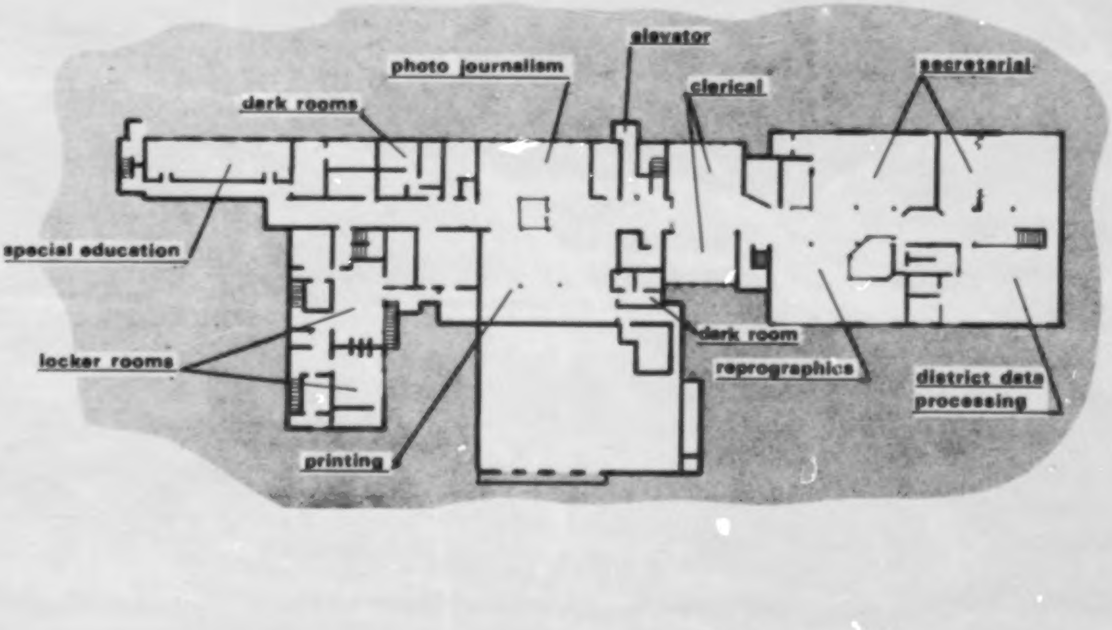

distributive education
education
social studies
wrestling room

The construction of a new high school made the old high school available for recycling and the local school district decided to turn the old campus into the new Westminster Enrichment Park, a turning-point opportunity for district students. The new center was needed as a source of career-vocational education for students from any of the district's high schools, a place for enrichment courses, an alternative high school without walls, and an adult education and community recreation center.

Physical and money problems were typical. Over the years the "Westy" campus had grown into an assortment of several uncoordinated buildings, fields, and parking areas, built and expanded at several different times and in several different styles. The renovation had to be accomplished in less than a year and only a limited budget could be allocated to an enrichment program.

As a result, few major structural changes were made and only essential face-lift items were included. The emphasis was on reorganizing existing space, creating new spaces and entries where required, and developing exterior treatment and site work which would both restore aging structures and tie disparate building and site elements together.

After


elevator
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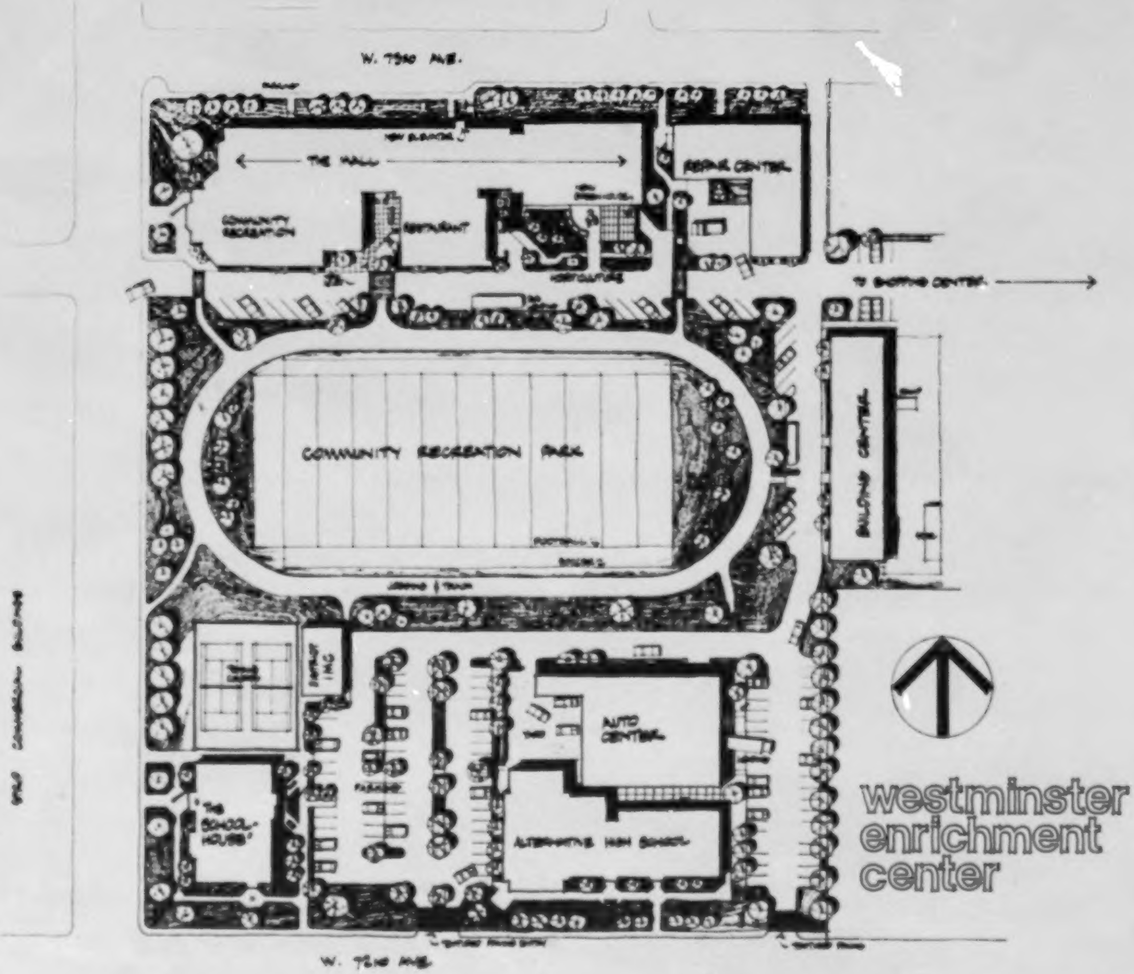
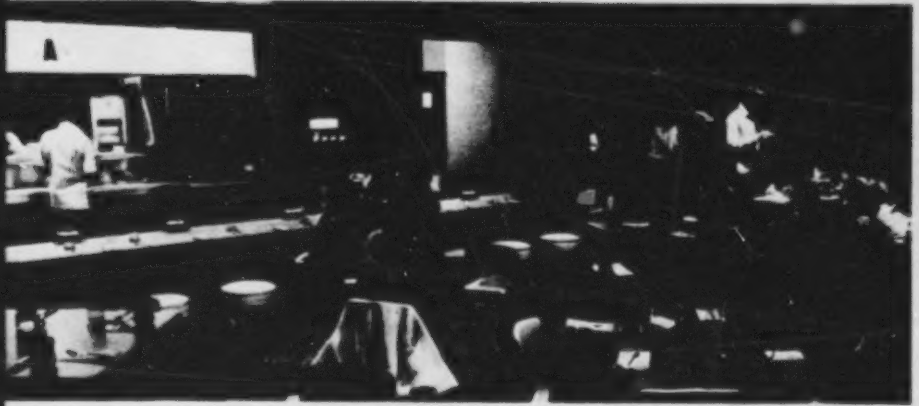
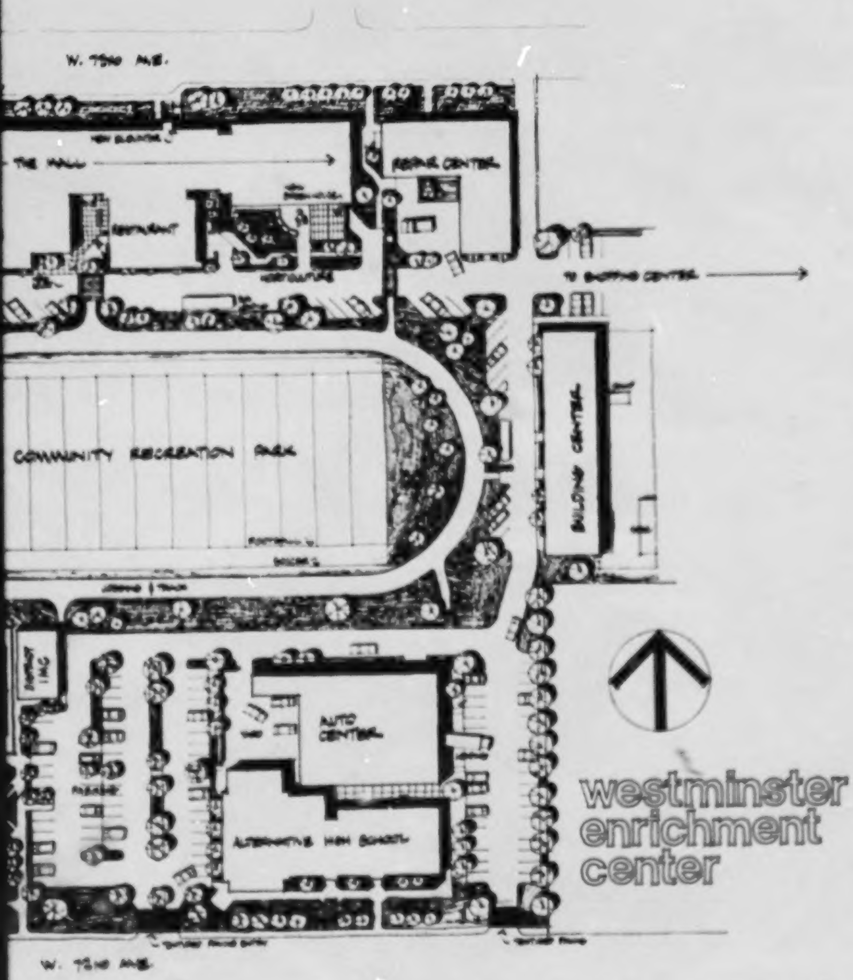
secretarial
dark rooms
special education
locker rooms
printing
dark room
reprographics
district data processing

The old athletic field i
landscaped to provide play
a community park atmosph
furniture is being added, al
paving patterns and textur
more integrated look to the
and other graphics carry ou
center theme inside and ou
redevelopment progresses,
schoolhouse at the most vi
site will be fully restored—
historic structure and also
Chamber of Commerce.


W. 73RD AVE.
RAMP
NEW ELEVATOR
THE MALL
COMMUNITY RECREATION
RESTAURANT
HORTICULTURE
REPAIR CENTER
TO SHOPPING CENTER
COMMUNITY RECREATION PARK
FOOTBALL
SOCCER
JOGGING & TRACK
BUILDING CENTRAL
TENNIS COURTS
OUTPUT INC
PARKING
AUTO CENTER
ALTERNATIVE HIGH SCHOOL
"THE SCHOOL-HOUSE"
OLD COMMERCIAL BUILDING
W. 72ND AVE.
westminster
enrichment
center




THE MALL
REPAIR CENTER
RESTAURANT
HORTICULTURE
TO SHOPPING CENTER
COMMUNITY RECREATION PARK
JOGGING & TRACK
BUILDING CENTER
AUTO CENTER
PARKING
ALTERNATIVE HIGH SCHOOL
westminster
enrichment
center

The old athletic field is being re-landscaped to provide play fields in more of a community park atmosphere. Some street furniture is being added, along with new paving patterns and textures to provide a more integrated look to the campus. Signing and other graphics carry out the enrichment center theme inside and out. As redevelopment progresses, an existing frame schoolhouse at the most visible corner of the site will be fully restored—partly as an historic structure and also to serve the Chamber of Commerce.

Verner Elementary School
Verona, Pennsylvania

Cecil J. Tranquill, Superintendent
Burt, Hill & Associates, Architects

verner
elementary
school

As student populations shift, districts are sometimes confronted with the challenge to make an existing secondary facility acceptable and inviting to lower elementary students.

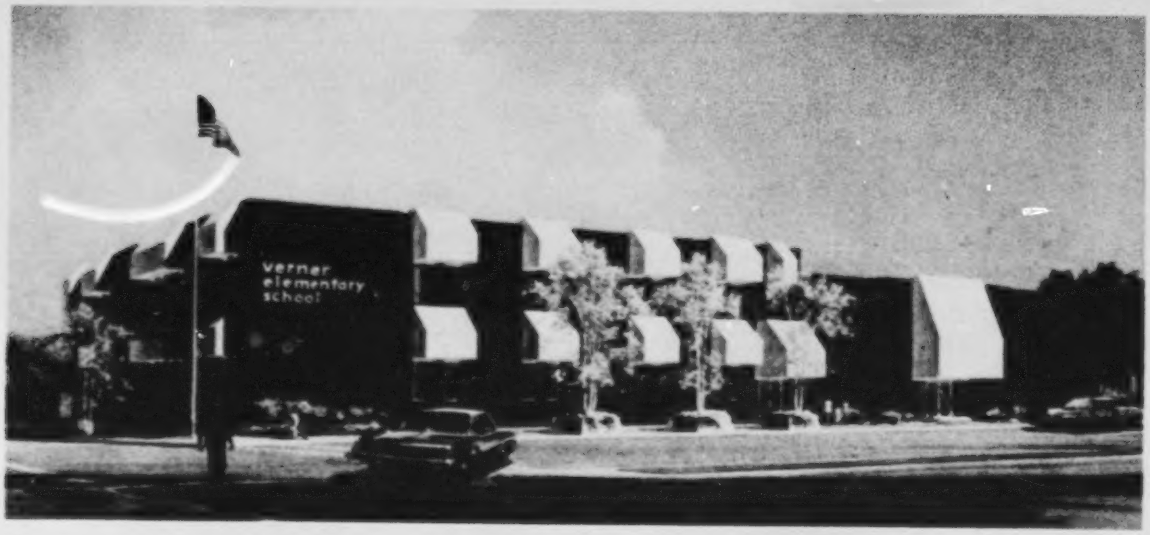
After some study of such a problem in Verona it was determined to re-create an existing junior high school into a needed elementary school for pre-schoolers and primary grade children. The existing facility was built in the thirties during the days of the depression. It was a rather simple building structurally, but a bit complicated in plan since it had been adapted to the sloping site with the use of three floors.

The re-creation includes exterior window canopies that help repeat the scale of residences with canopies in the area. On the interior, lower ceilings, lighting coves and bench indentations in the corridors help to change the character from a secondary to lower elementary environment. The exterior red brick was utilized throughout the interior. Classrooms were revised to provide open vistas from the corridors.

The existing gymnasium was adapted to an art area and an instructional materials center. The concrete bleachers were carpeted and used to make a dramatic entrance to this space from the corridor above. The learning centers on the main or middle floor have visual access to the art and library areas below.

Interestingly, the old building had a mechanical system that utilized 100% outside air. The heating requirement on this revised project is estimated to be cut to one-fourth of the previous requirement. This has been accomplished partly by reducing window areas and improving insulation.

ndent
hitects



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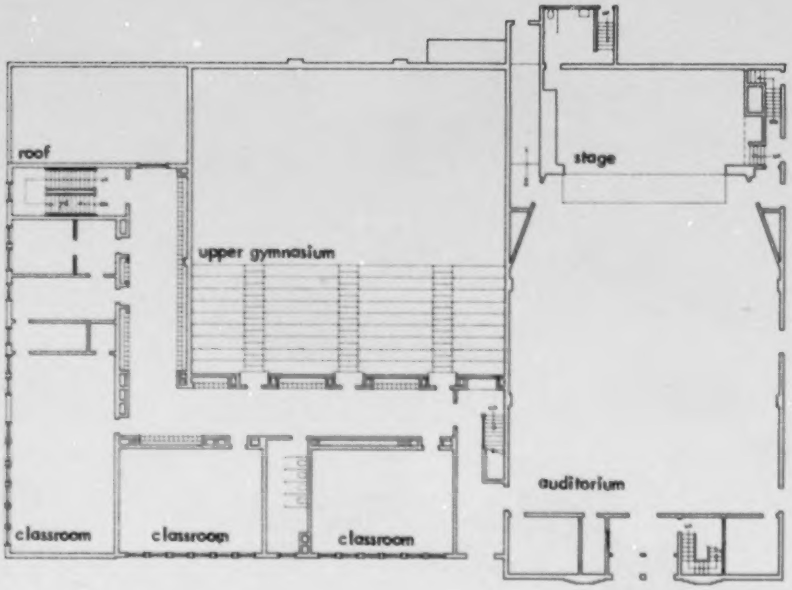
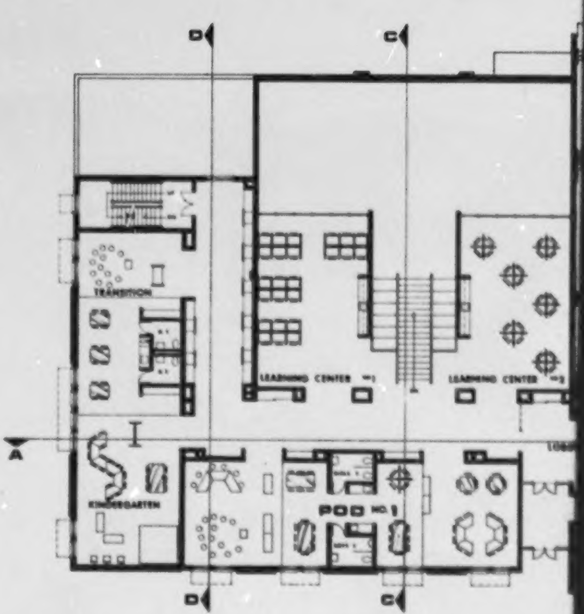
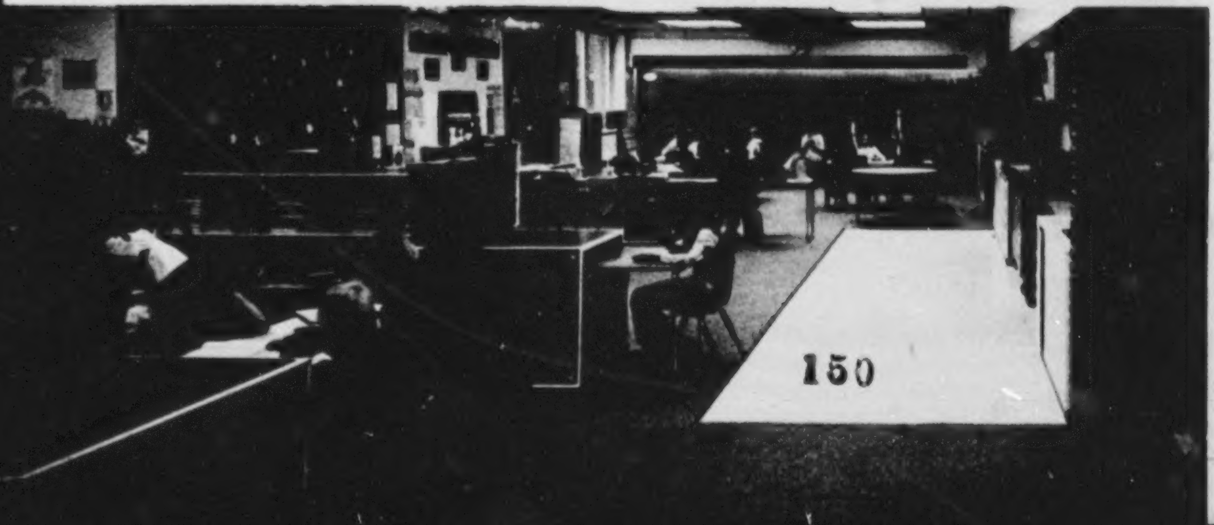

roof
stage
upper gymnasium
auditorium
classroom
classroom
classroom

EXISTING MAIN LEVEL

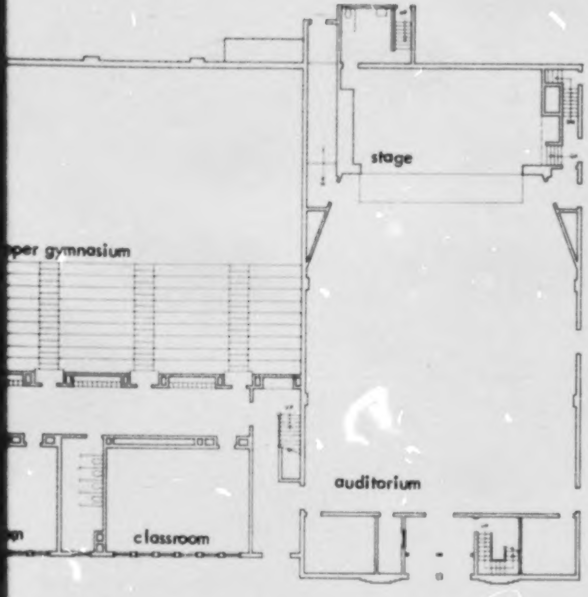

D
C
TRANSITION
LEARNING CENTER NO. 1
LEARNING CENTER NO. 2
A
KINDERGARTEN
POD NO. 1
D
C

NEW DESIGN - MAIN LEVEL

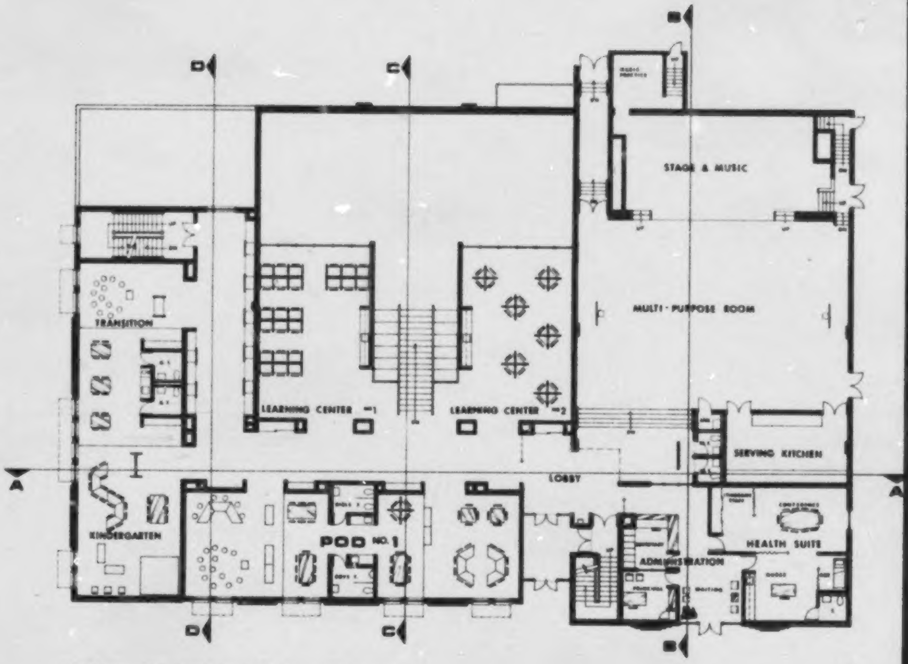
Multi-purpose Room



Classroom Pod

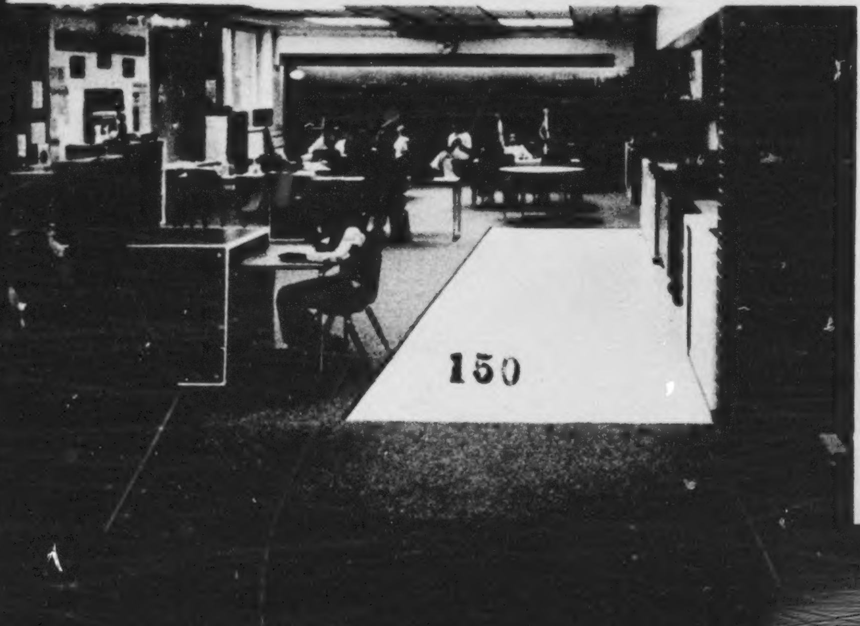

stage
per gymnasium
auditorium
classroom

EVEL

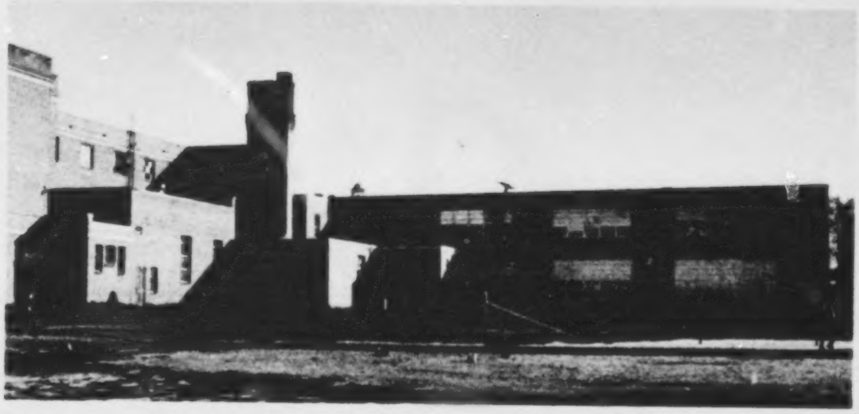

B
D
C
STAGE & MUSIC
MULTI-PURPOSE ROOM
TRANSITION
LEARNING CENTER #1
LEARNING CENTER #2
SERVING KITCHEN
LOBBY
A
KINDERGARTEN
POD NO. 1
ADMINISTRATION
CONFERENCE
HEALTH SUITE

NEW DESIGN - MAIN LEVEL

Multi-purpose Room

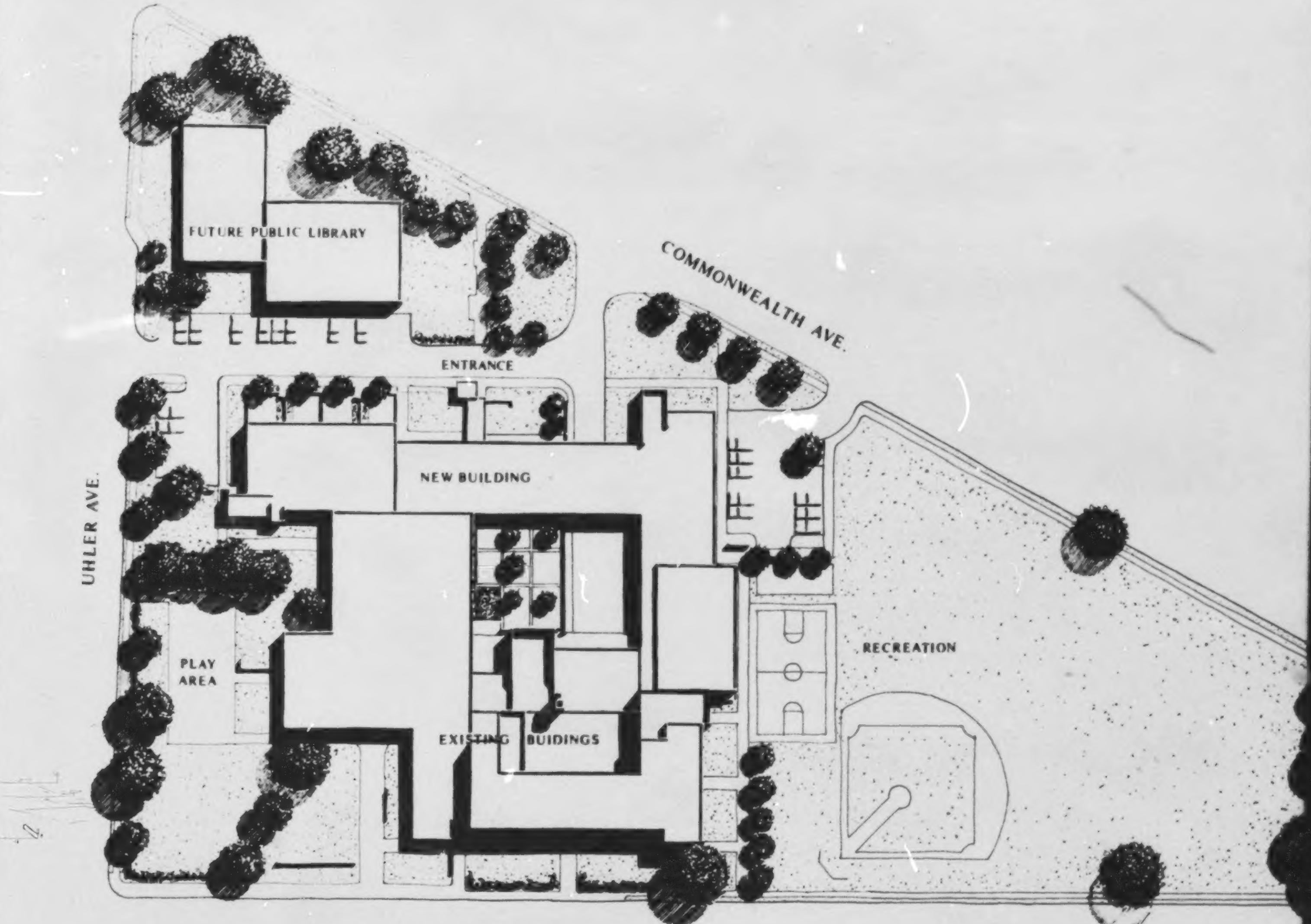


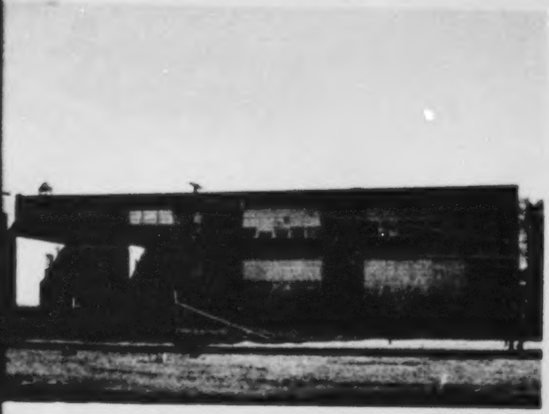
Classroom Pod



Mount Vernon Elementary S
Alexandria, Virginia

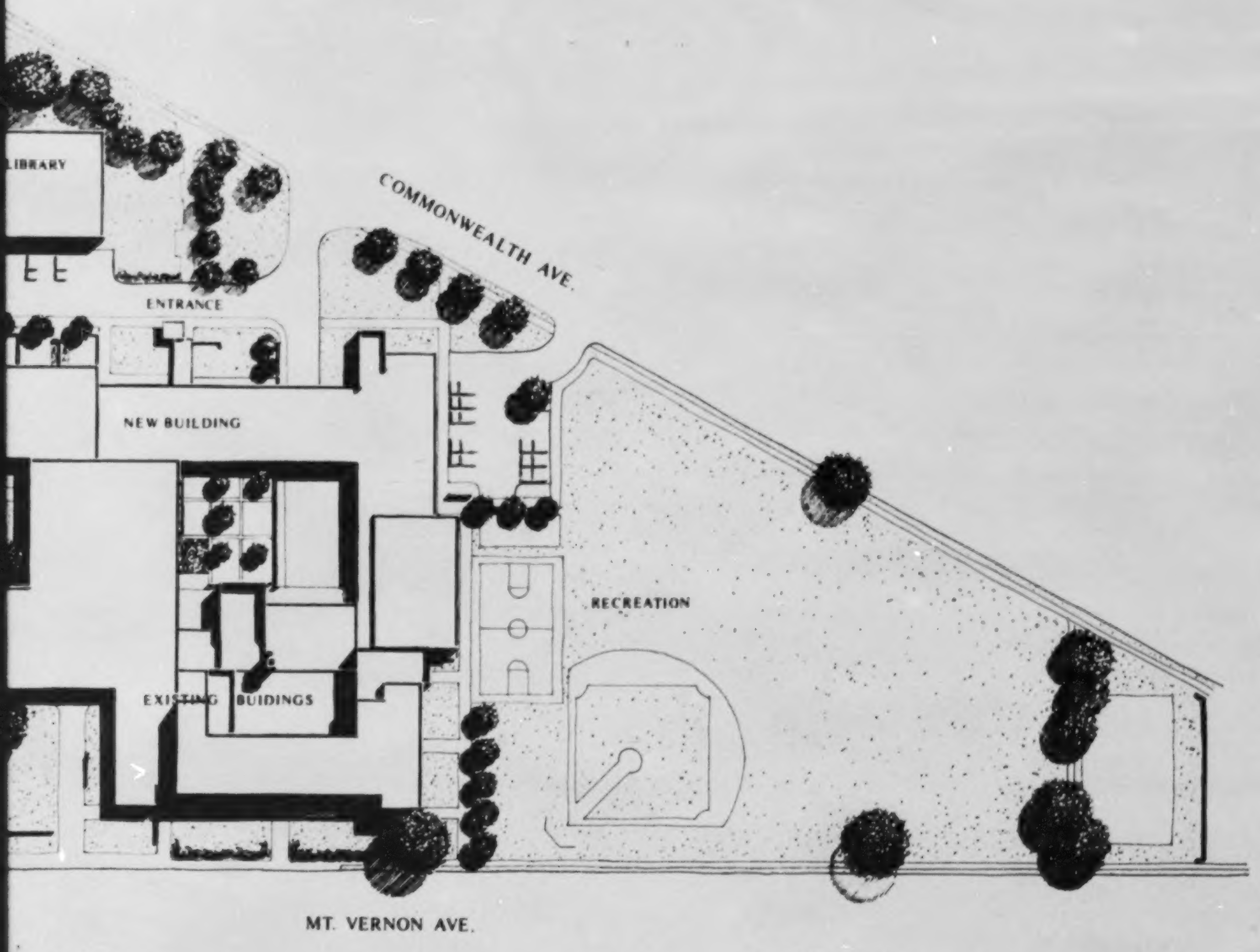
John C. Albohm, Superinten
Vosbeck, Vosbeck, Kendrick
Architects

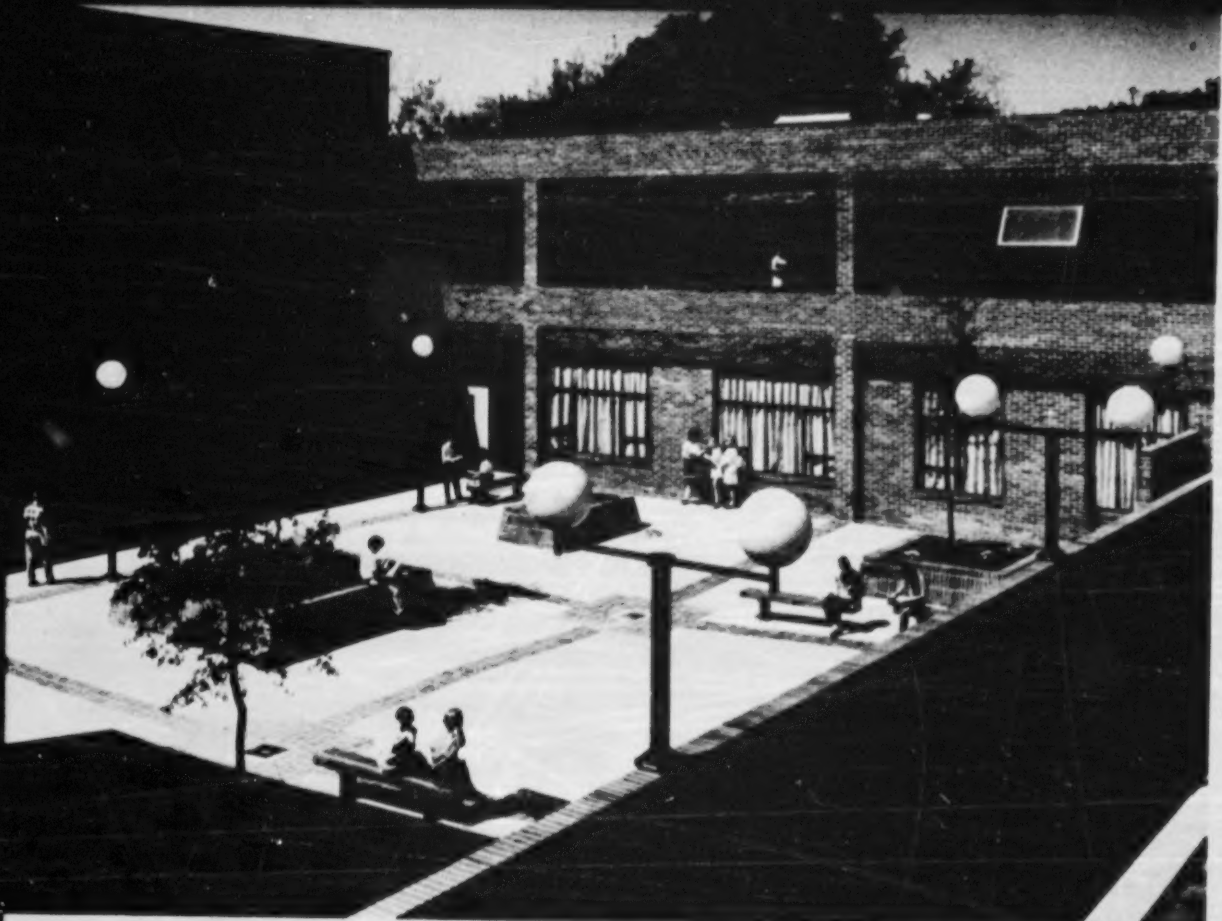

FUTURE PUBLIC LIBRARY
COMMONWEALTH AVE.
ENTRANCE
NEW BUILDING
UHLER AVE.
PLAY AREA
RECREATION
EXISTING BUIDINGS
MT. VERNON AVE.



Mount Vernon Elementary School
Alexandria, Virginia

John C. Albohm, Superintendent
Vosbeck, Vosbeck, Kendrick & Redinger, Architects


LIBRARY
COMMONWEALTH AVE.
ENTRANCE
NEW BUILDING
RECREATION
EXISTING BUIDINGS
MT. VERNON AVE.



When it was decided
school, originally built in 1
1949 additions, it was mas
serve changing educational
maximum use of the site, a
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The 1910 structure was de
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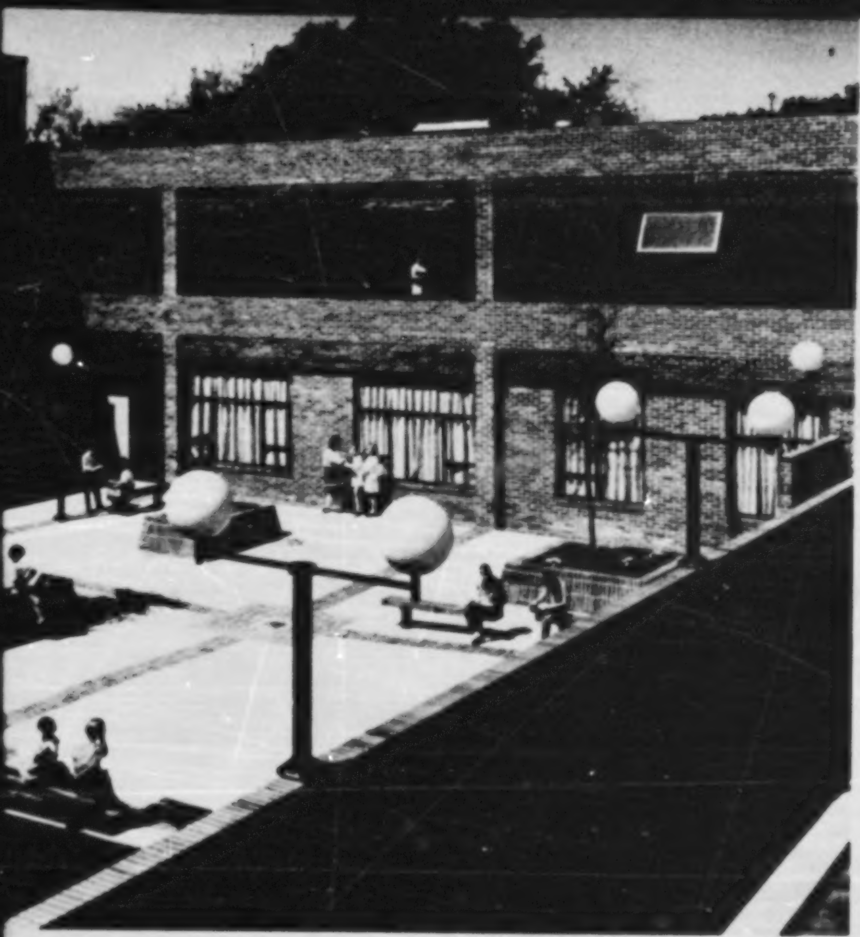
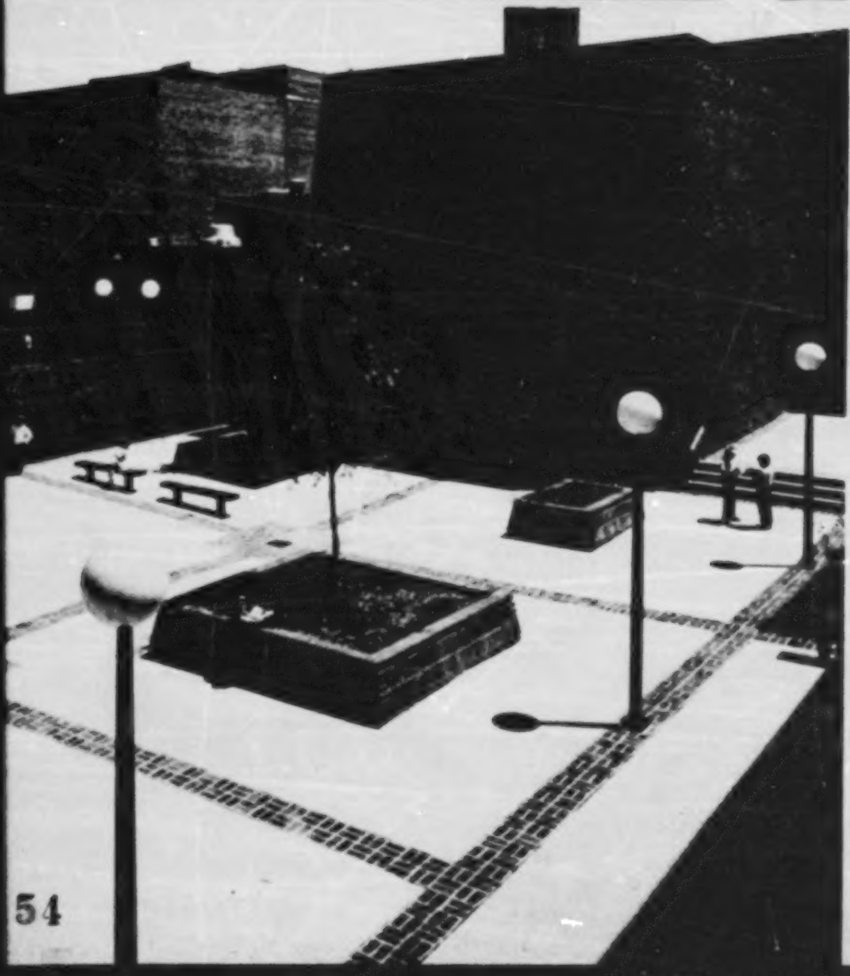
retained and rehabilitated.
combines existing and add
compatibly into an integra
addition, provisions were
community recreation and



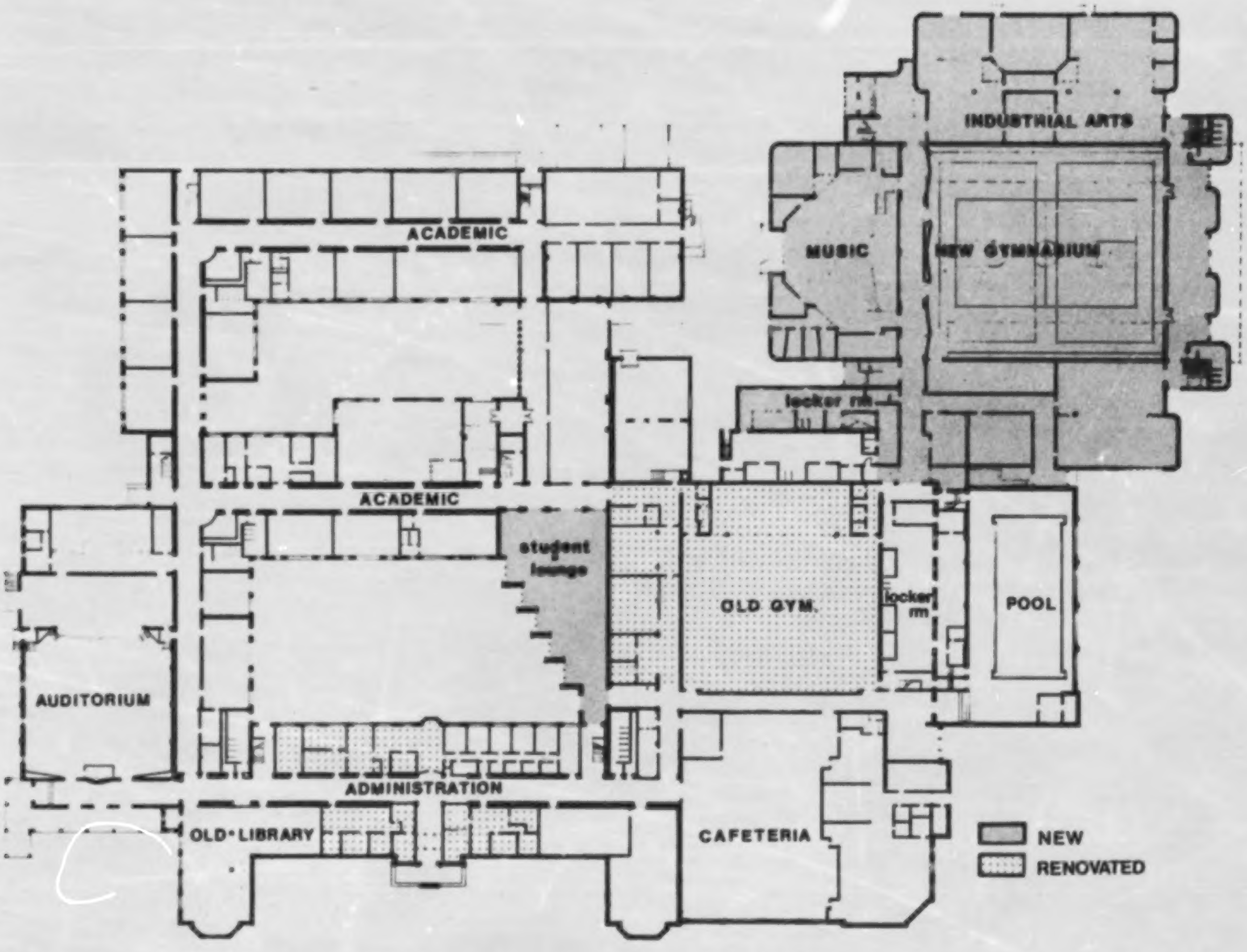


When it was decided to convert this old school, originally built in 1910 with 1929 and 1949 additions, it was master-planned to serve changing educational needs, to make maximum use of the site, and to relate well to the community and serve it as a center. The 1910 structure was deemed obsolete and demolished, and the other two existing units retained and rehabilitated. The "new" school combines existing and additional structures compatibly into an integrated whole. In addition, provisions were made for community recreation and public library.

Horton Watkins High School
Ladue School District, St. Louis, Missouri

Charles McKenna, Superintendent
Wm. B. Ittner, Architect

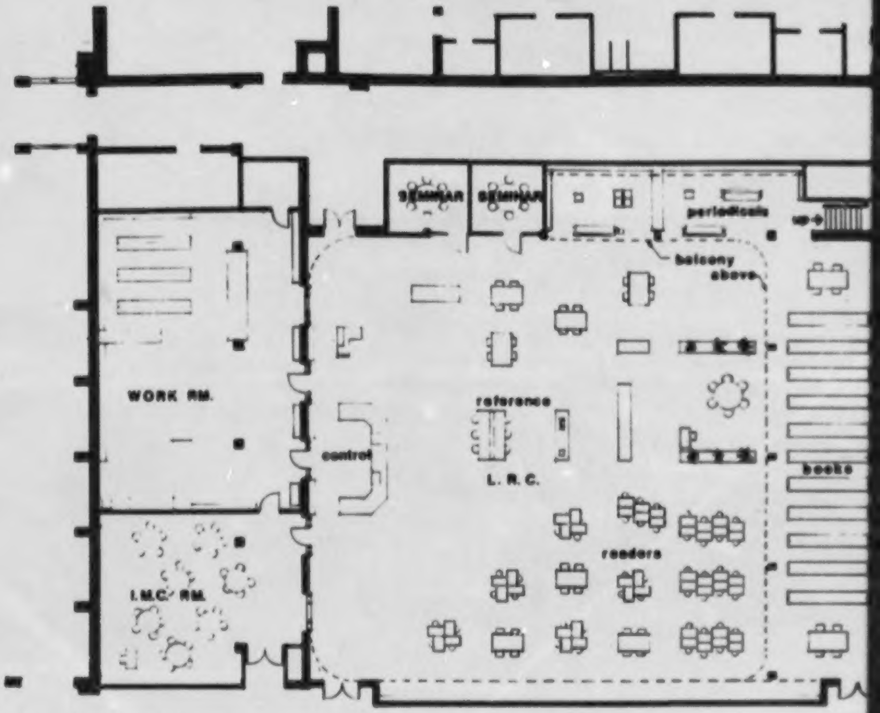
Old library


INDUSTRIAL ARTS
MUSIC
NEW GYMNASIUM
ACADEMIC
locker rm
ACADEMIC
student lounge
OLD GYM.
locker rm
POOL
AUDITORIUM
ADMINISTRATION
OLD LIBRARY
CAFETERIA
NEW
RENOVATED

This project illustrates one facet of a common revitalization process—the increased need for an enlarged learning resource center.

The most desirable location for a much needed LRC in this school happened to be the space occupied by the old gym.

The old gym is to be replaced by a new larger facility on the periphery of the building. Since the old gym was structurally sound and of about the right size (when a balcony and certain peripheral spaces were added), it served as the shell for the new learning resource center.


SEMINAR
SEMINAR
periodicals
up
balcony above
WORK RM.
control
reference
L.R.C.
readers
books
I.M.C. RM.

Renovated old gymnasium

View from balcony of LRC "Old Gym" space

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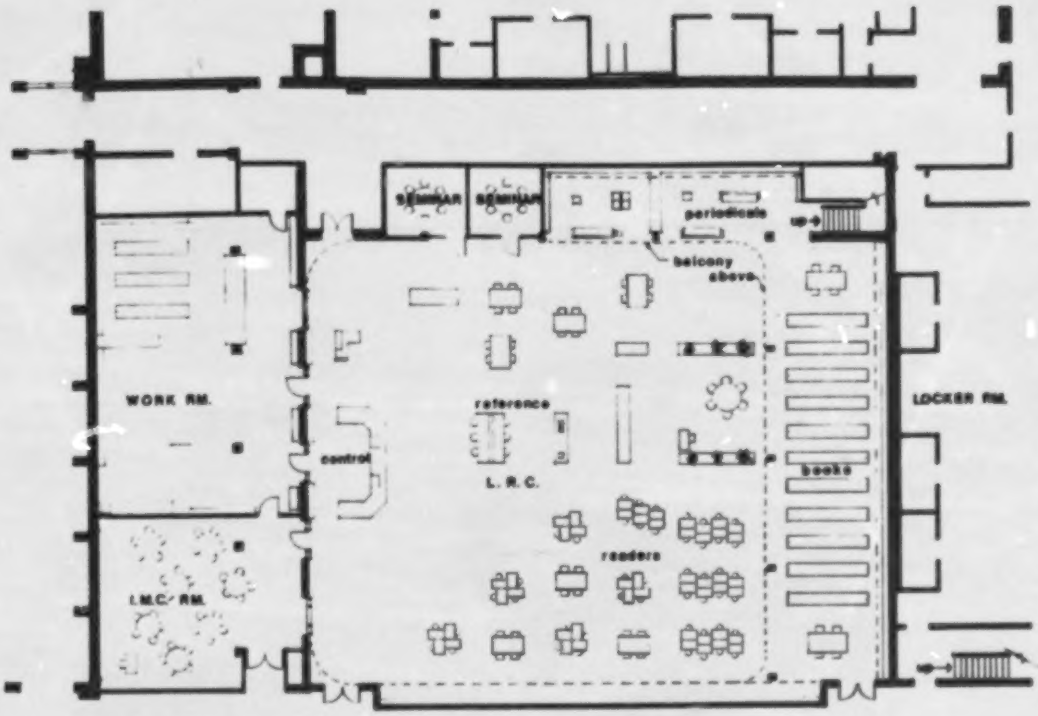
SEMINAR
SEMINAR
periodicals
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balcony above
WORK RM.
reference
control
L.R.C.
LOCKER RM.
books
readers
I.M.C./RM.
up

Renovated old gymnasium

"Old Gym" space

157

Fisheye view of balcony and lower floor of LRC

158

Eugene Field Elementary School
Chicago, Illinois

Joseph P. Hannon, Superintendent
O'Donnell, Wicklund, Pigozzi, Architects

The most successful pro
evolves naturally and in resp
program. Such is the case wi
project at the Field School. I
project in size and certainly i
investment. For a school sys
budget the size of Chicago (c
city) the expenditure is almo
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has been described by Super
Hannon as potentially the m
current project in Chicago's
dollar building program. W
several reasons, among them

- The project was institut
  school level by a princip
  teachers who wanted it
- The project had the bac
  school's parent group.
- The project enjoyed the
  highly imaginative peo
- The project was comple
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  the time the contract w
  teachers and students n
  got bogged down in th
  city bureaucracy.
- It is human in scale and
  cliches of too many mo

Principal Florence Pask
EFL-sponsored modernizati
decided she liked what she
She had a group of first-gra
at her K-8, 860-student, 19
who were frustrated in thei
teach in self-contained clas
bolted-down desks. Miss P
help of various Chicago sch
encouragement from EFL, n
experiment in what were fo
classrooms with bolted dow

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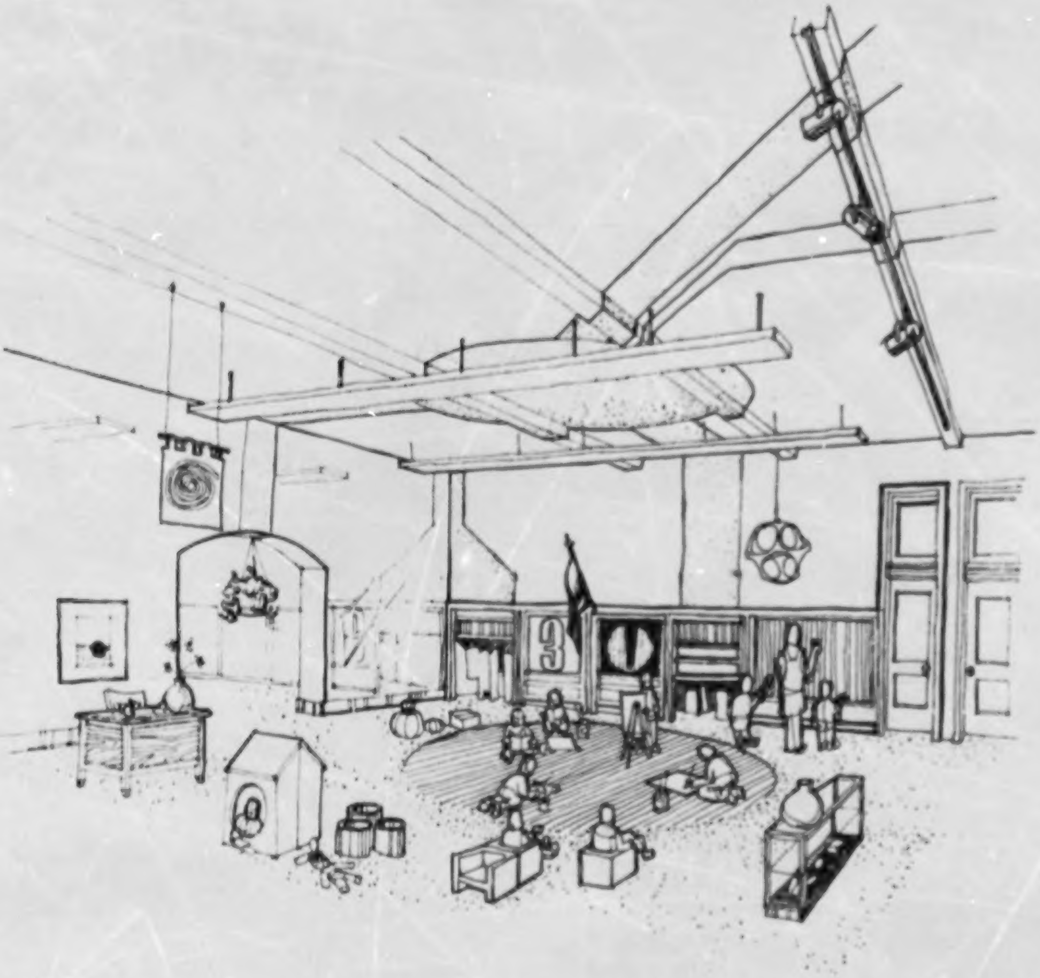
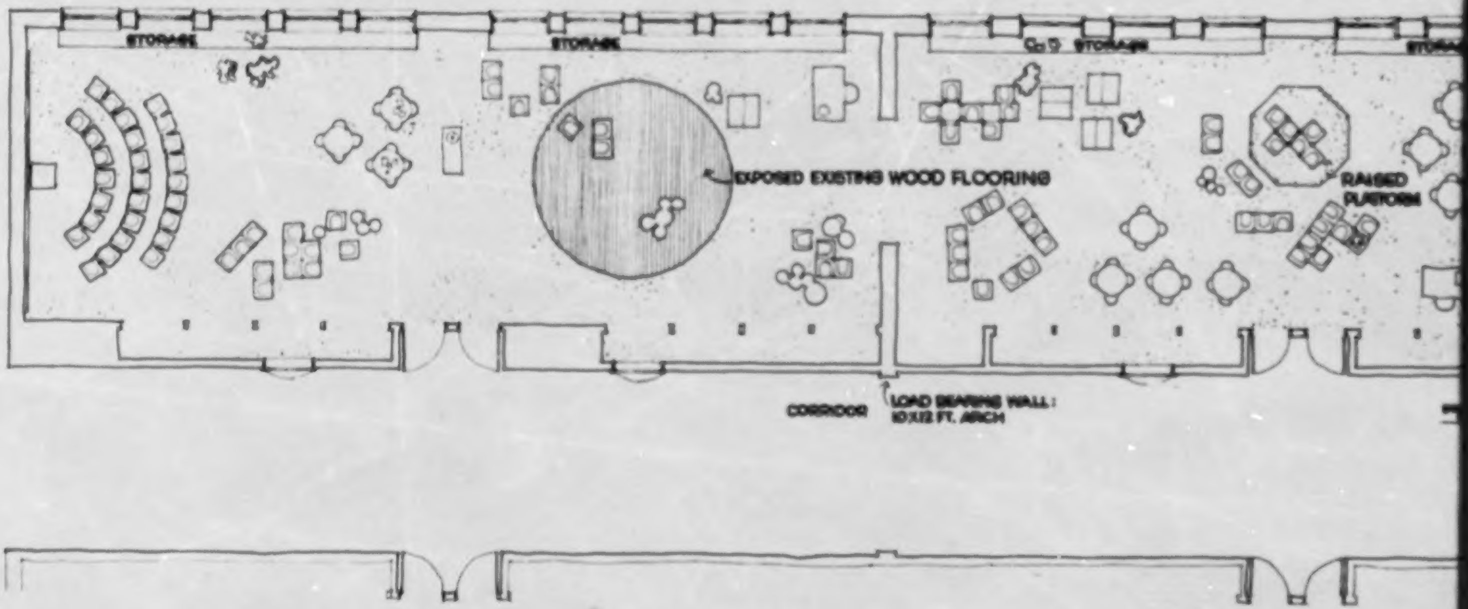
ndent
i, Architects

The most successful project is one that evolves naturally and in response to a stated program. Such is the case with the remodeling project at the Field School. It's a modest project in size and certainly in financial investment. For a school system with a budget the size of Chicago (or any other large city) the expenditure is almost in the petty cash category. But the Field School project has been described by Superintendent Joseph Hannon as potentially the most influential current project in Chicago's multi-million dollar building program. Why? There are several reasons, among them:

- The project was instituted at the local school level by a principal and some teachers who wanted it to happen.
- The project had the backing of the school's parent group.
- The project enjoyed the talents of some highly imaginative people.
- The project was completed on a tight schedule, about a month and a half from the time the contract was let until the teachers and students moved in. It never got bogged down in the inevitable big city bureaucracy.
- It is human in scale and resists the cliches of too many modernizations.

Principal Florence Paskind attended an EFL-sponsored modernization workshop and decided she liked what she saw and heard. She had a group of first-grade teachers back at her K-8, 860-student, 1915-vintage school who were frustrated in their desire to team-teach in self-contained classrooms with bolted-down desks. Miss Paskind, with the help of various Chicago school officials and encouragement from EFL, now has a one-pod experiment in what were four self-contained classrooms with bolted down desks.




STORAGE
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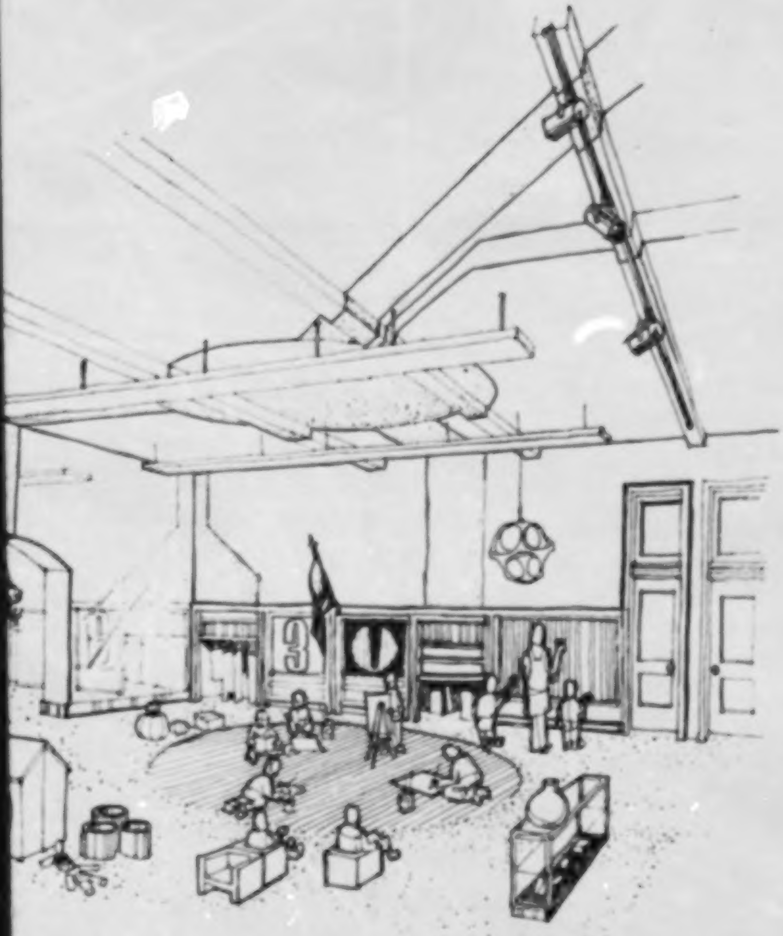
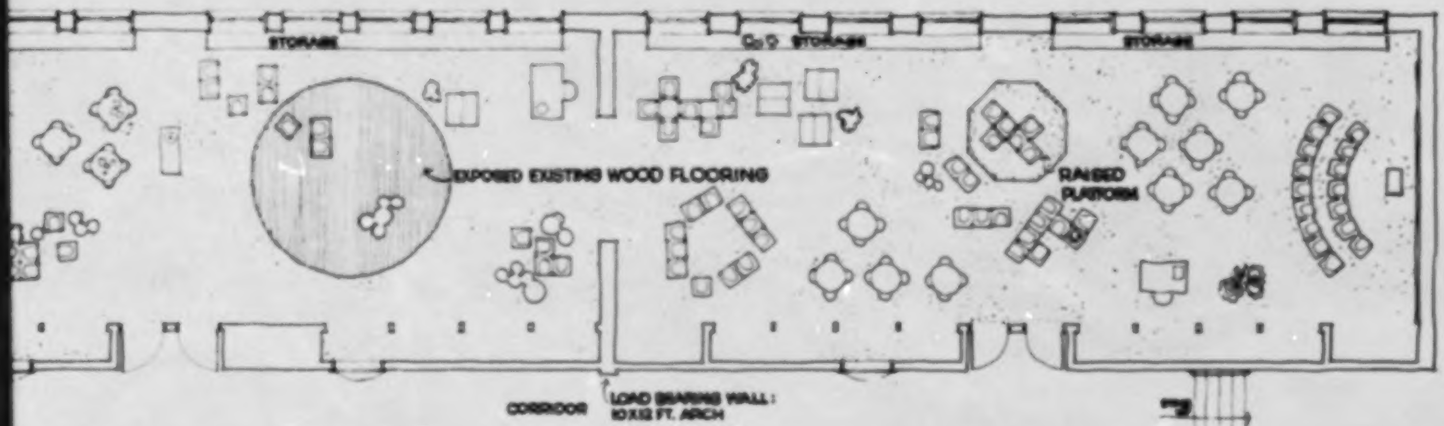
EXPOSED EXISTING WOOD FLOORING
RAISED PLATFORM
CORRIDOR
LOAD BEARING WALL: 10X12 FT. ARCH



161


STORAGE
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EXPOSED EXISTING WOOD FLOORING
RAISED PLATFORM
CORRIDOR
LOAD BEARING WALL : 10X12 FT. ARCH

162.

Paul V. Moore High School
Central Square, New York

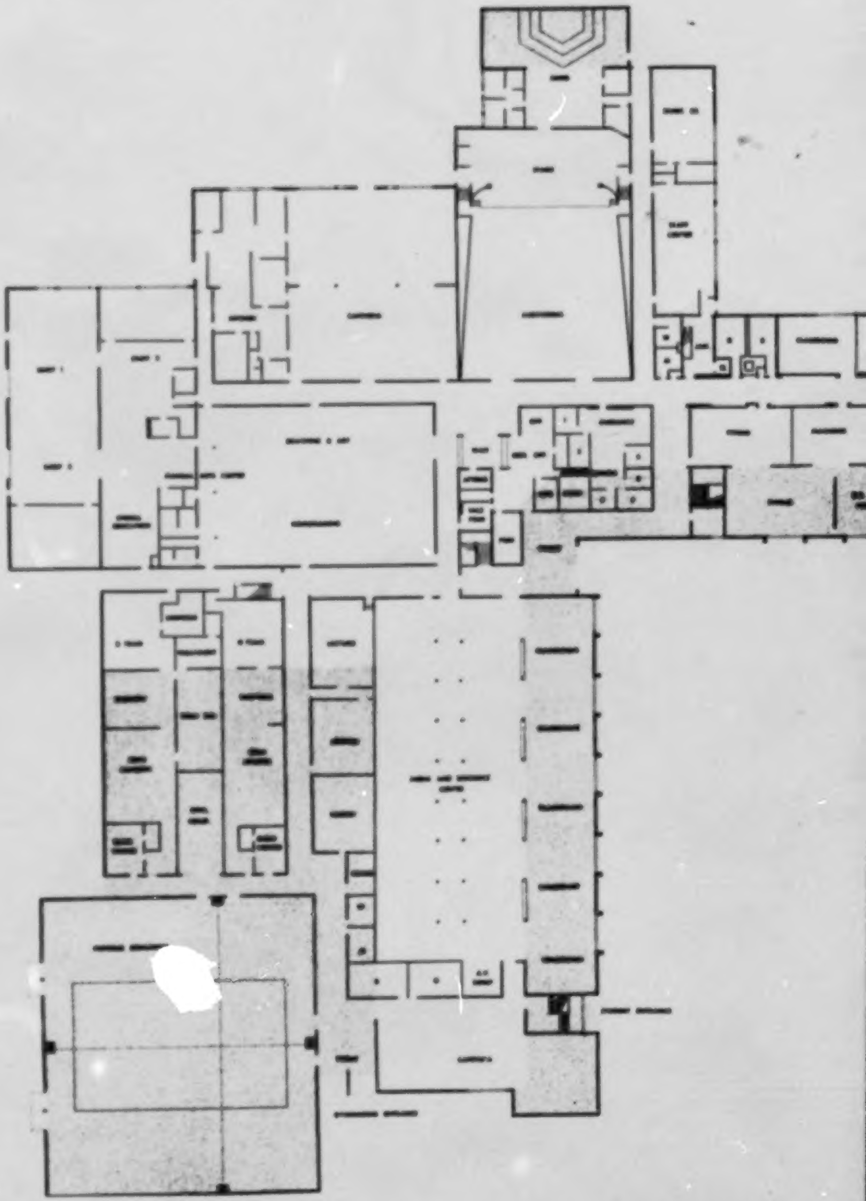
David E. Bane, Superintendent
Sargent, Webster, Crenshaw & Folley, Architects

Exterior before rehabilitation

Faced with expanding population, this rural school district needed to increase the capacity of its 20-year-old senior high school from 1,200 students to 1,800 students. Concentrating an addition at one end of the building would have solved the over-population problem, but left the district locked into a rigid "eggcrate" plan for the existing school.

The solution was to add one structural bay to the width of the two-story fingers of the academic wing and to replace the undersized physical education area. The existing gymnasium became the expanded home economics and art departments at the first floor level and the new second floor platform became the social studies loft. The elimination of the rigid classroom enclosures creates the flexibility to encourage interdepartment interaction, team teaching, modular scheduling and expanded course offerings. Movable partitions make it possible to use the school in an infinite variety of educational modes without the delay and expense of major changes.

By wrapping the new addition around the existing shell, creating a totally new exterior appearance, and providing new ceilings and lights, air conditioning, and fully carpeted academic spaces, the school district feels they got a "new" school for a fraction of the cost of a completely new 1,800-student senior high school.



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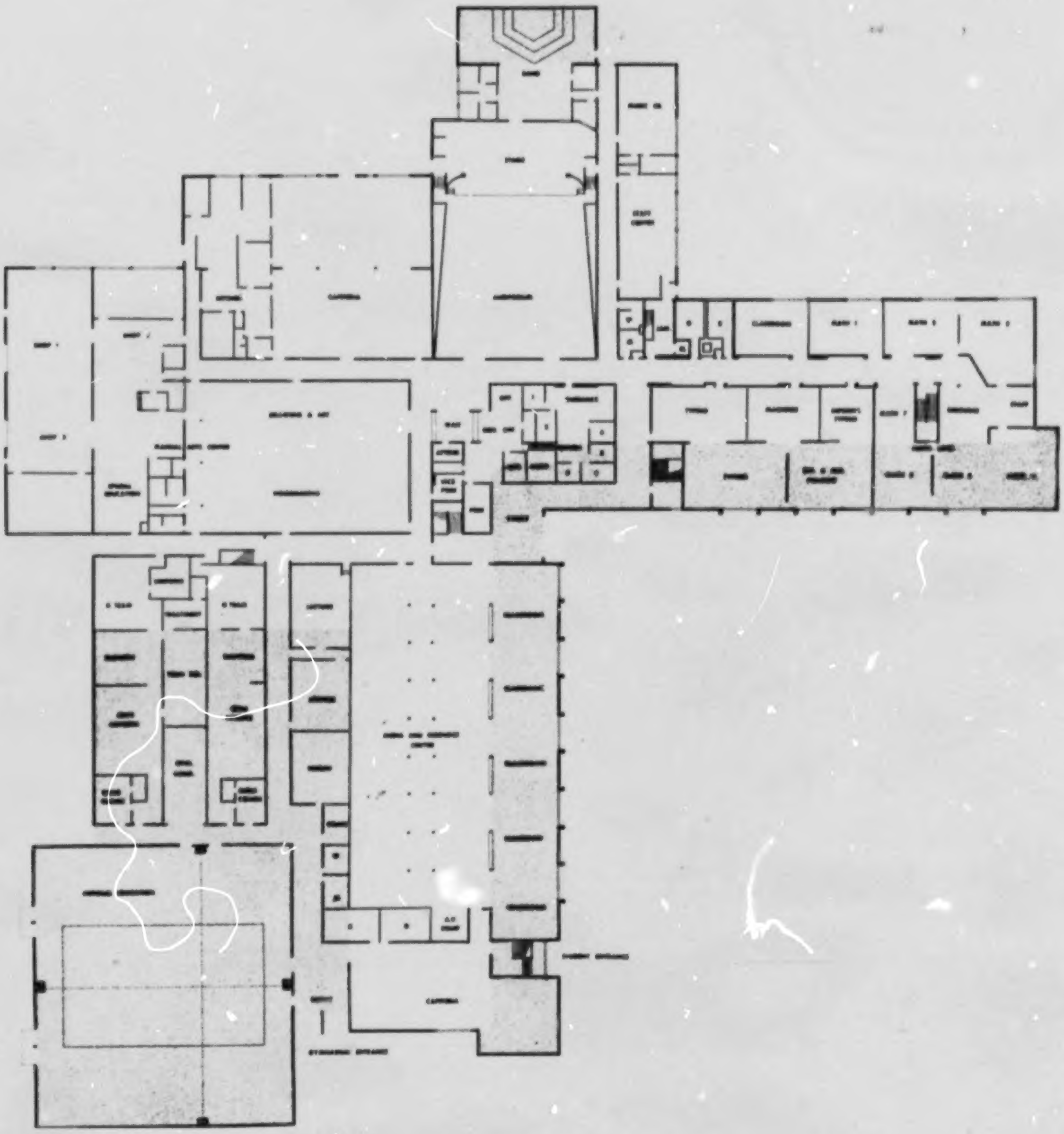
Exterior before rehabilitation



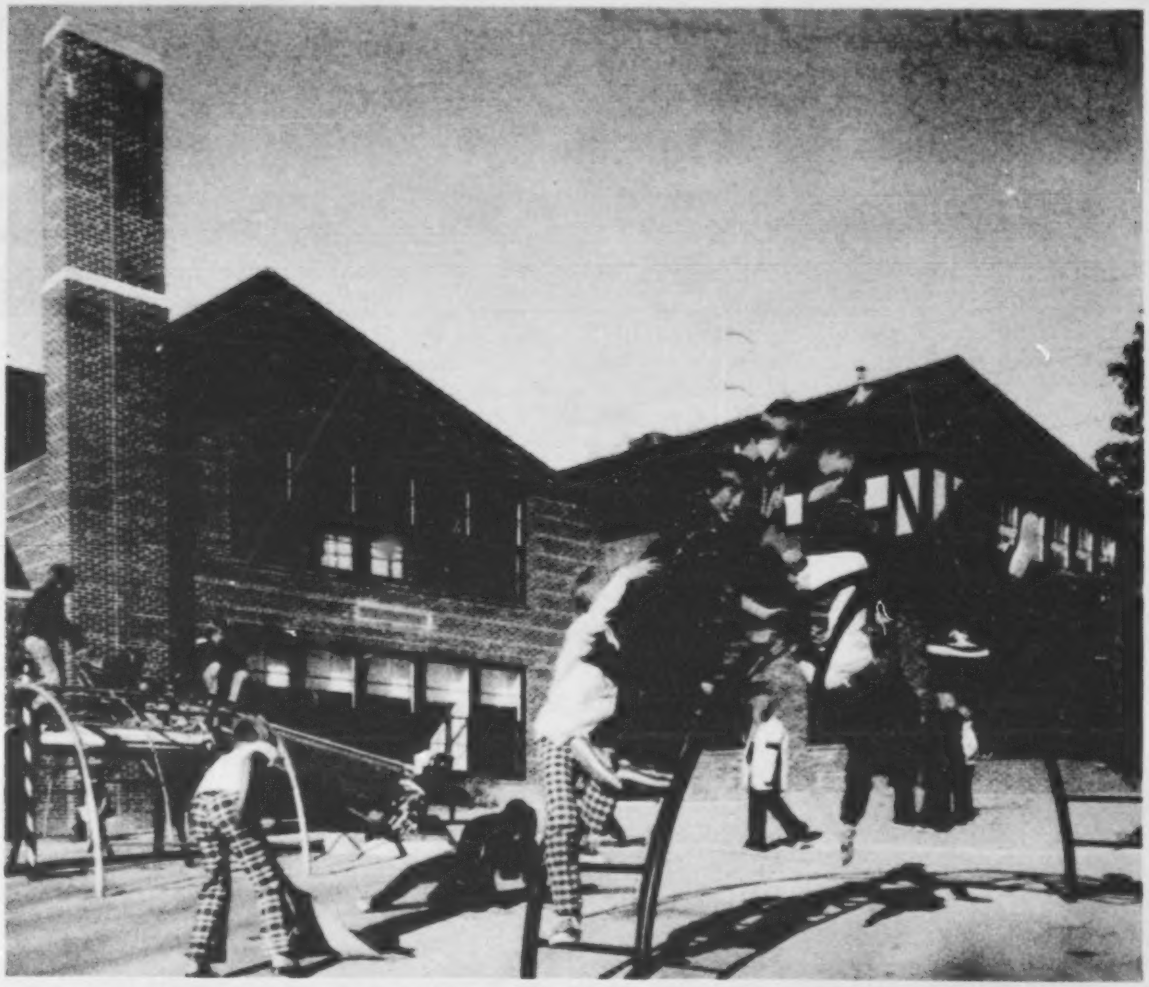
Exterior after rehabilitation

165

166

Loveland Elementary School
Omaha, Nebraska

H. Vaughn Phelps, Superintendent
Henningson, Durham & Richardson,
Architects



Loveland Elementary S
older buildings in Westside
Schools District 66. Compl
was designed to harmonize
homes in its suburban neig
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space to meet new challeng
teaching techniques and th
individualized programs.

The new school envir
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graphics especially appealin
students. Planning areas fo
open learning spaces provid
for new teaching technique
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an evolving, growing progr
furnishings and instruction
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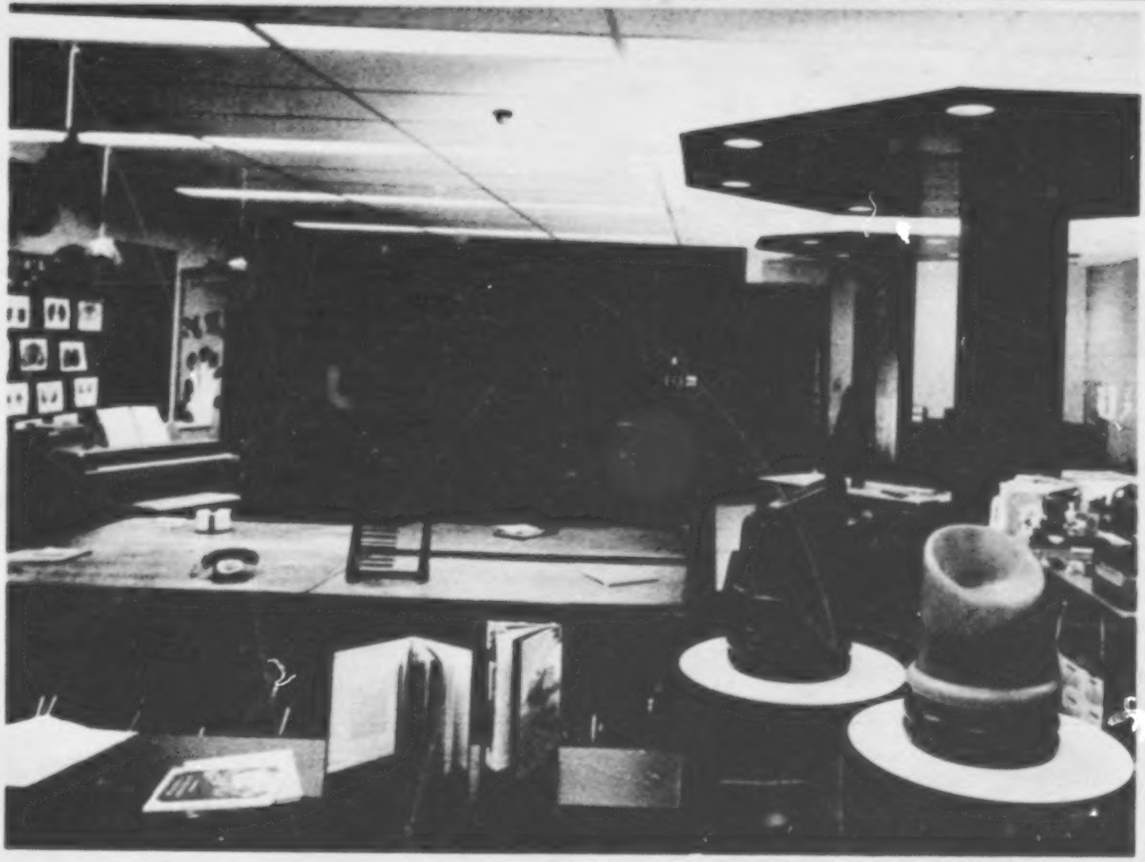
Loveland Elementary School is one of the older buildings in Westside Community Schools District 66. Completed in 1933, it was designed to harmonize with the brick homes in its suburban neighborhood. This renovation program concentrates on the interior of the building and updating the space to meet new challenges in curriculum, teaching techniques and the need for more individualized programs.

The new school environment makes use of the trapezoidal doorways and colorful graphics especially appealing to young students. Planning areas for teachers and open learning spaces provide opportunities for new teaching techniques. Efforts have been made to blend the old and new to reflect an evolving, growing program. Portable furnishings and instructional aids contribute to the flexibility of the renovated building.

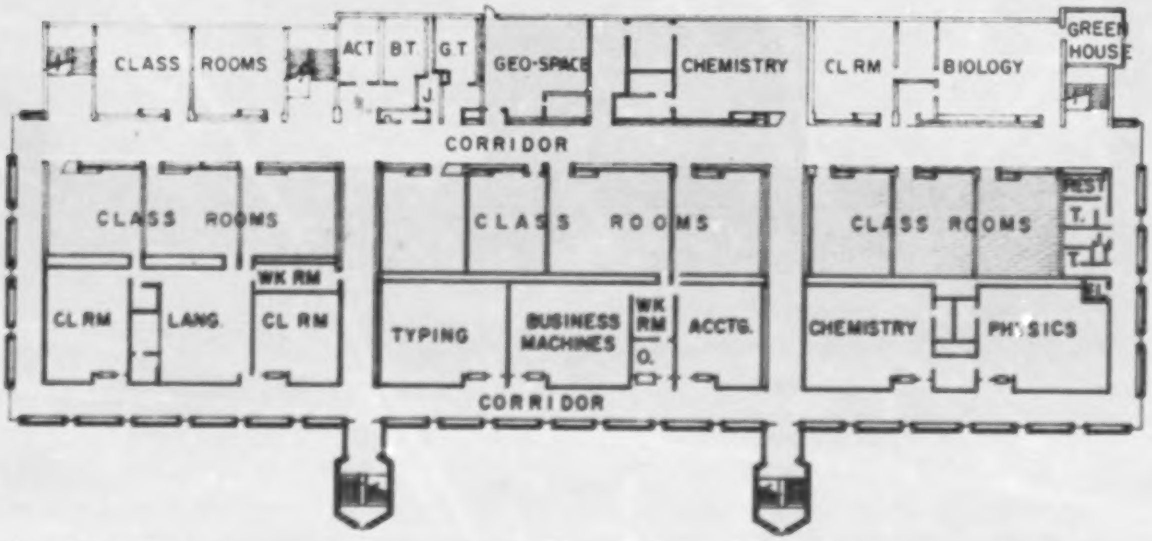


169

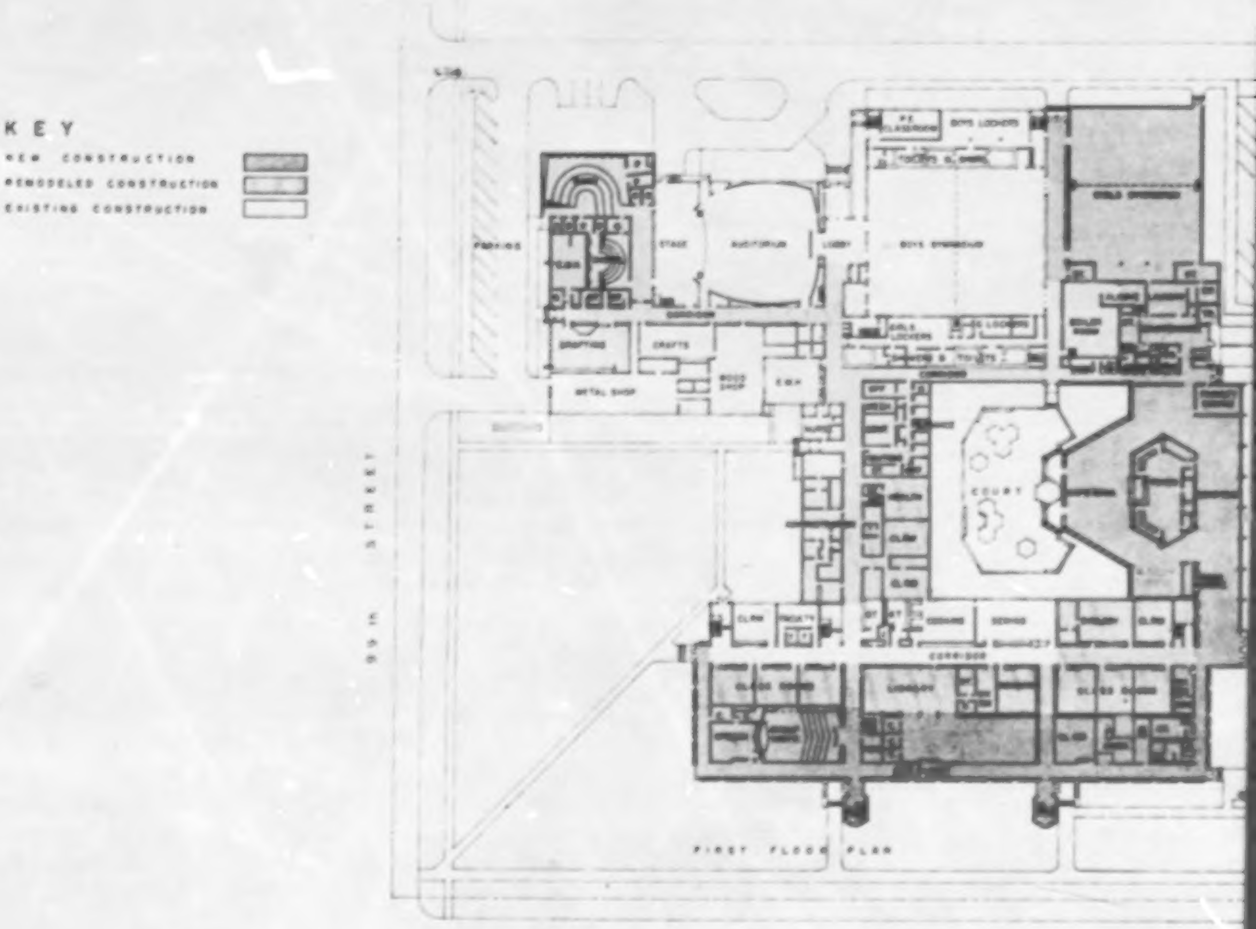
170

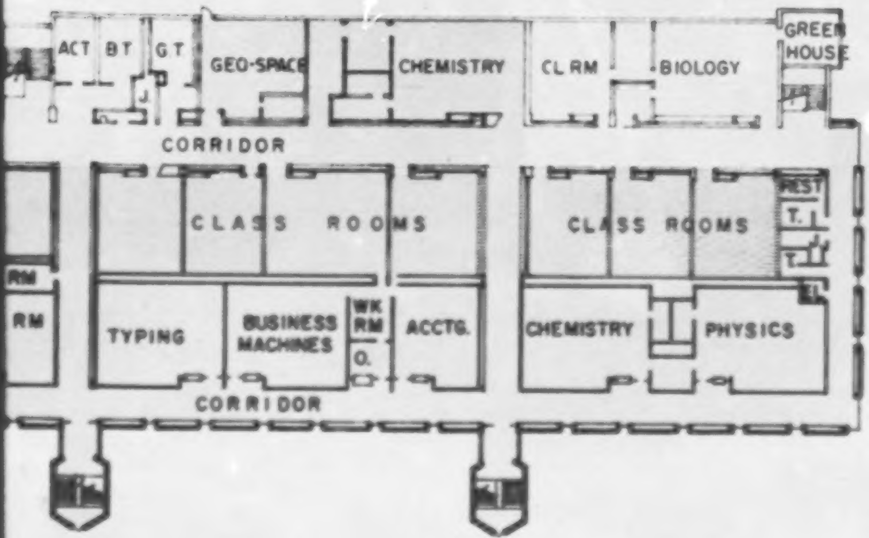
Evergreen Park High School
Evergreen Park, Illinois

Robert C. Wall, Superintendent
Perkins & Will, Architects

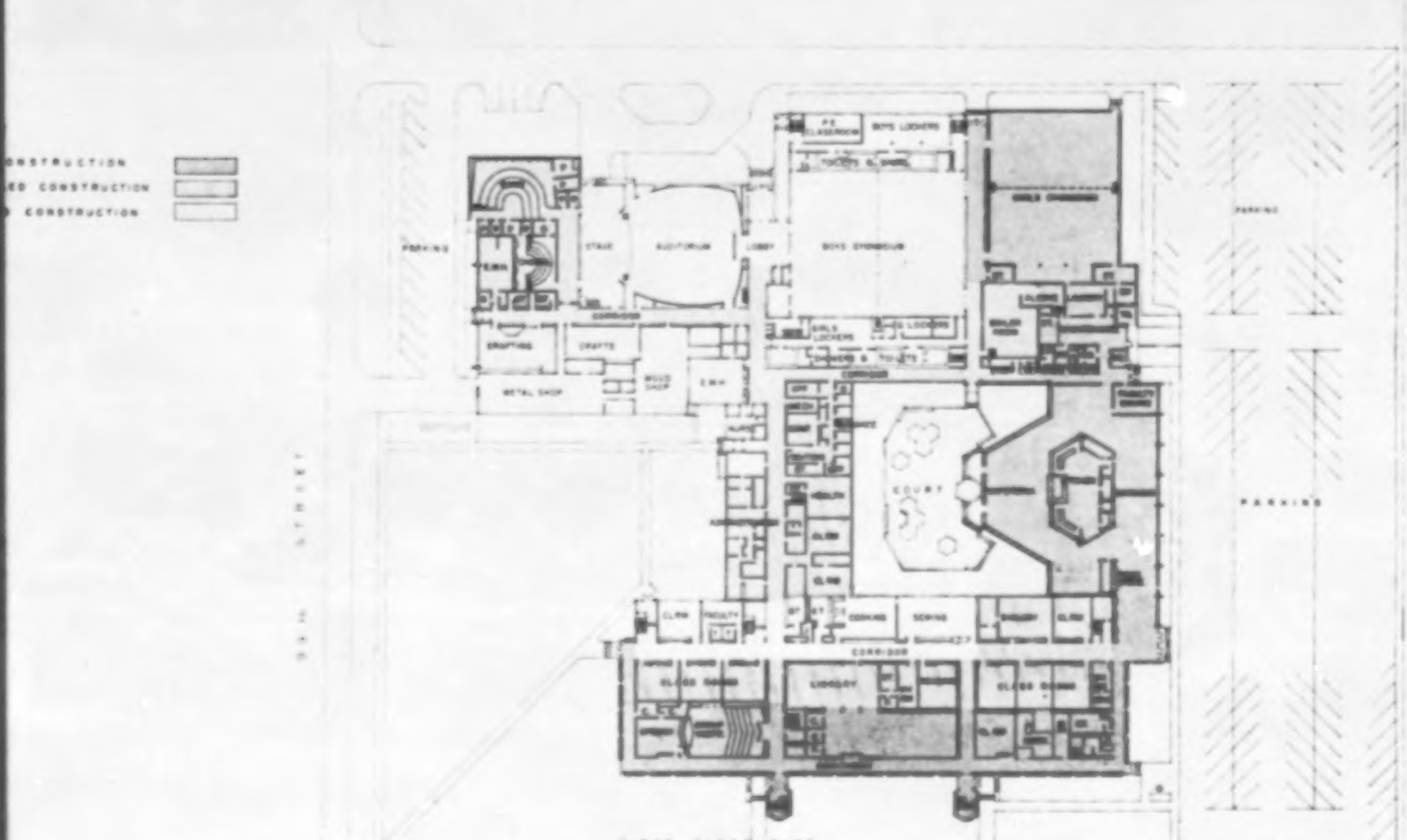

CLASS ROOMS
ACT
B.T.
G.T.
J
GEO-SPACE
CHEMISTRY
CL RM
BIOLOGY
GREEN HOUSE
CORRIDOR
CLASS ROOMS
CLASS ROOMS
CLASS ROOMS
REST
T.
T.
CL RM
LANG.
WK RM
CL RM
TYPING
BUSINESS MACHINES
WK RM
O.
ACCTG.
CHEMISTRY
PHYSICS
CORRIDOR

Second Floor Plan


KEY
NEW CONSTRUCTION
REMODELED CONSTRUCTION
EXISTING CONSTRUCTION
PARKING
STAGE
AUDITORIUM
LOBBY
P.E. CLASSROOM
BOYS LOCKERS
BOYS GYMNASIUM
GIRLS GYMNASIUM
GIRLS LOCKERS
DRAFTING
CRAFTS
METAL SHOP
WOOD SHOP
COURT
CORRIDOR
STREET
FIRST FLOOR PLAN


ACT
BT
G.T
J.
GEO-SPACE
CHEMISTRY
CL.RM
BIOLOGY
GREEN HOUSE
CORRIDOR
CLASS ROOMS
CLASS ROOMS
REST
T.
T.
EL
RM
RM
TYPING
BUSINESS MACHINES
WK RM
O.
ACCTG.
CHEMISTRY
PHYSICS
CORRIDOR

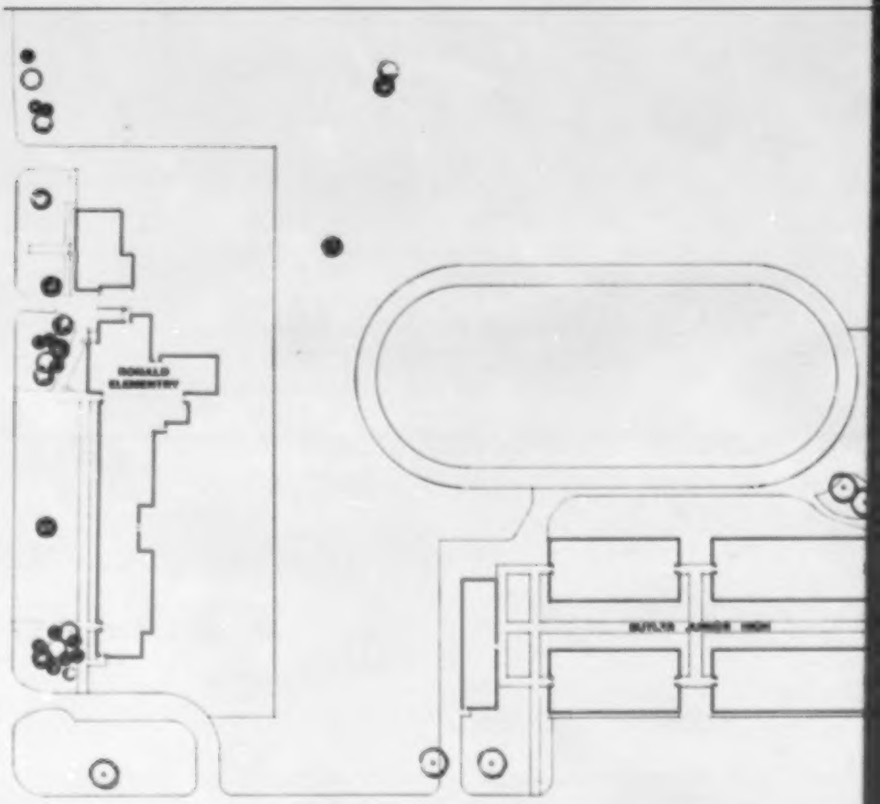
172


ONSTRUCTION
ED CONSTRUCTION
D CONSTRUCTION
PARKING
STAGE
AUDITORIUM
LOBBY
P.E. CLASSROOM
BOYS LOCKERS
TOILETS & SHWR.
BOYS GYMNASIUM
GIRLS GYMNASIUM
PARKING
E.M.H.
CORRIDOR
DRAFTING
CRAFTS
GIRLS LOCKERS
SHOWERS & TOILETS
WOOD SHOP
E.M.H.
METAL SHOP
CORRIDOR
COURT
HEALTH
CL.RM
CL.RM
PARKING
STREET
CL.RM
FACULTY
COOKING
SEWING
CL.RM
CORRIDOR
CLASS ROOMS
LIBRARY
CLASS ROOMS
CL.RM
FIRST FLOOR PLAN

173

Shorewood High School
Seattle, Washington

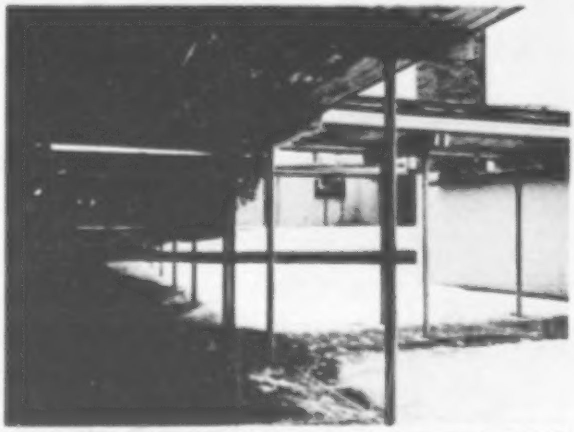
J. Loren Troxel, Superintendent
Waldron & Pomeroy, Architects



Existing Buildings

A well known, extensive modernization project, Shorewood High School, made use of existing, underutilized elementary and junior high schools and realized considerable savings for the school district. Making use of the existing schools, which shared a 22-acre site, also cut the construction time in half over the time required for comparable new facilities.

Even though extensive remodeling was undertaken, the older buildings were accepted as having a character of their own and integrated into the overall plan New units, courtyards and covered walkways tie the units together.



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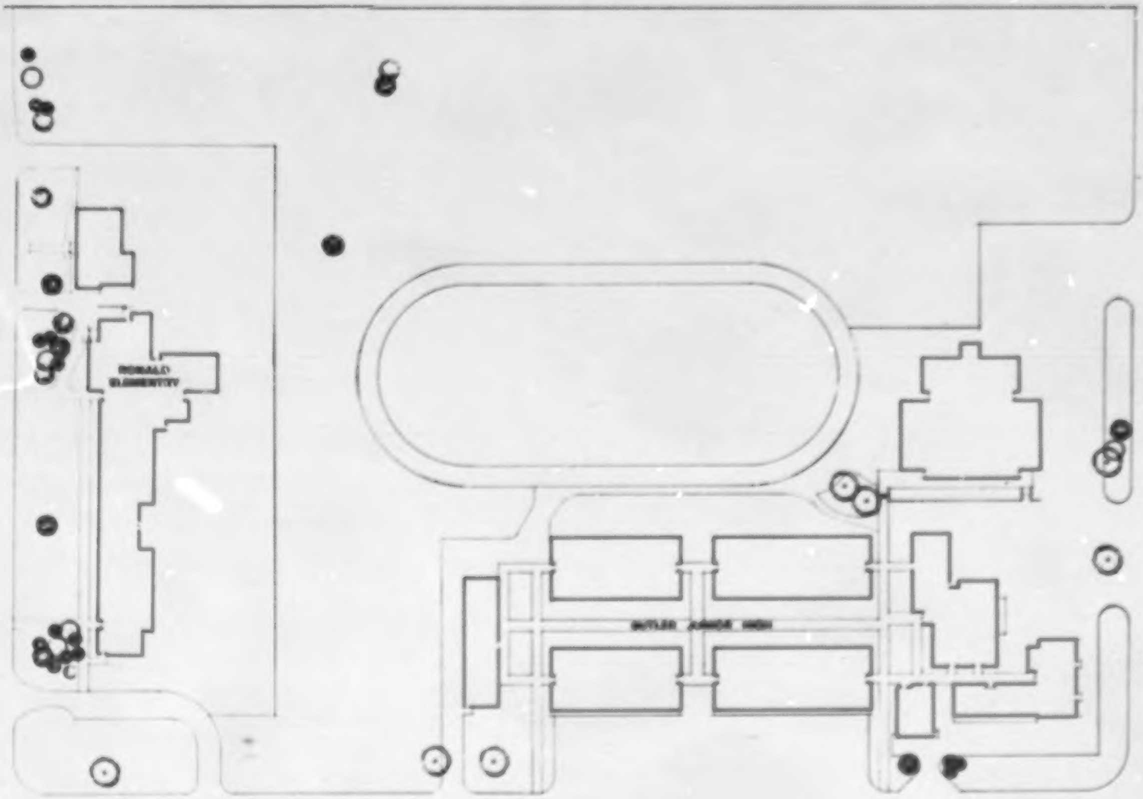
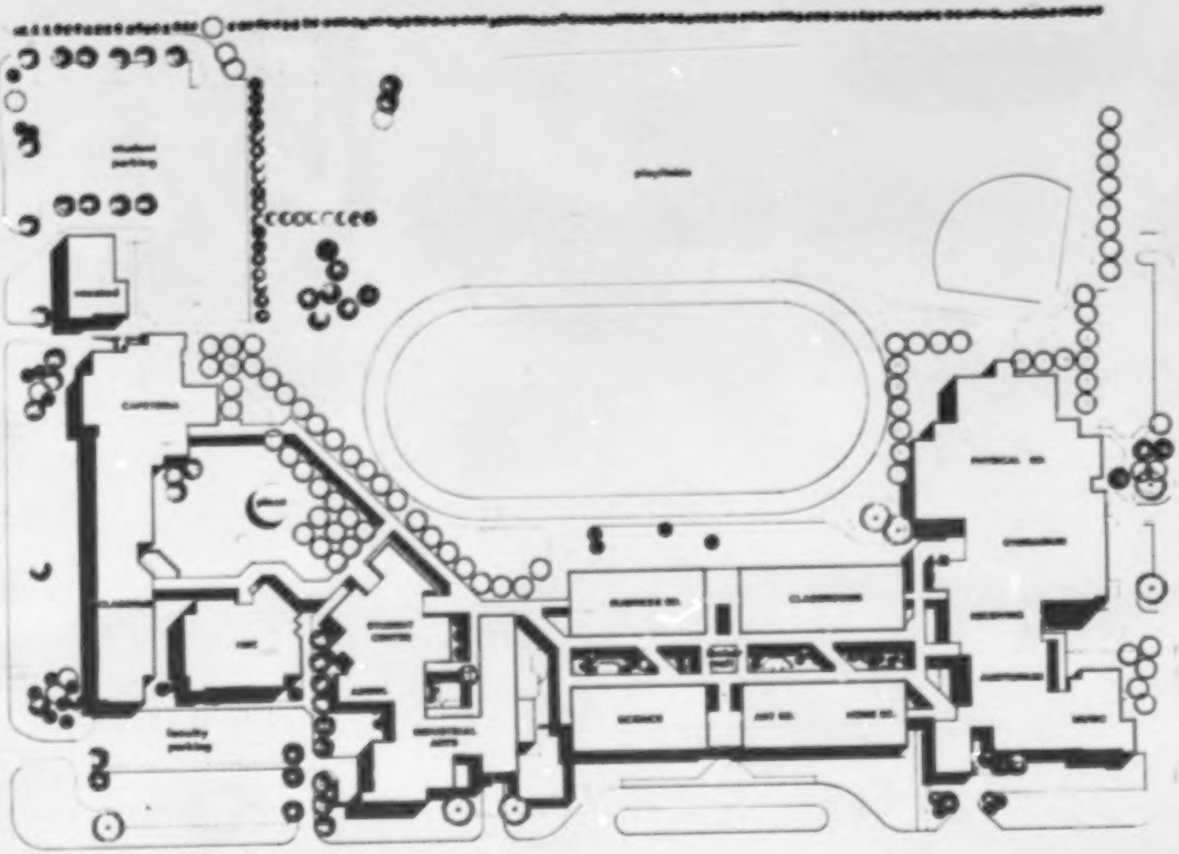
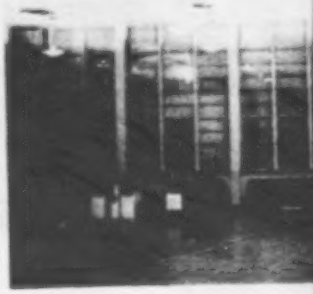
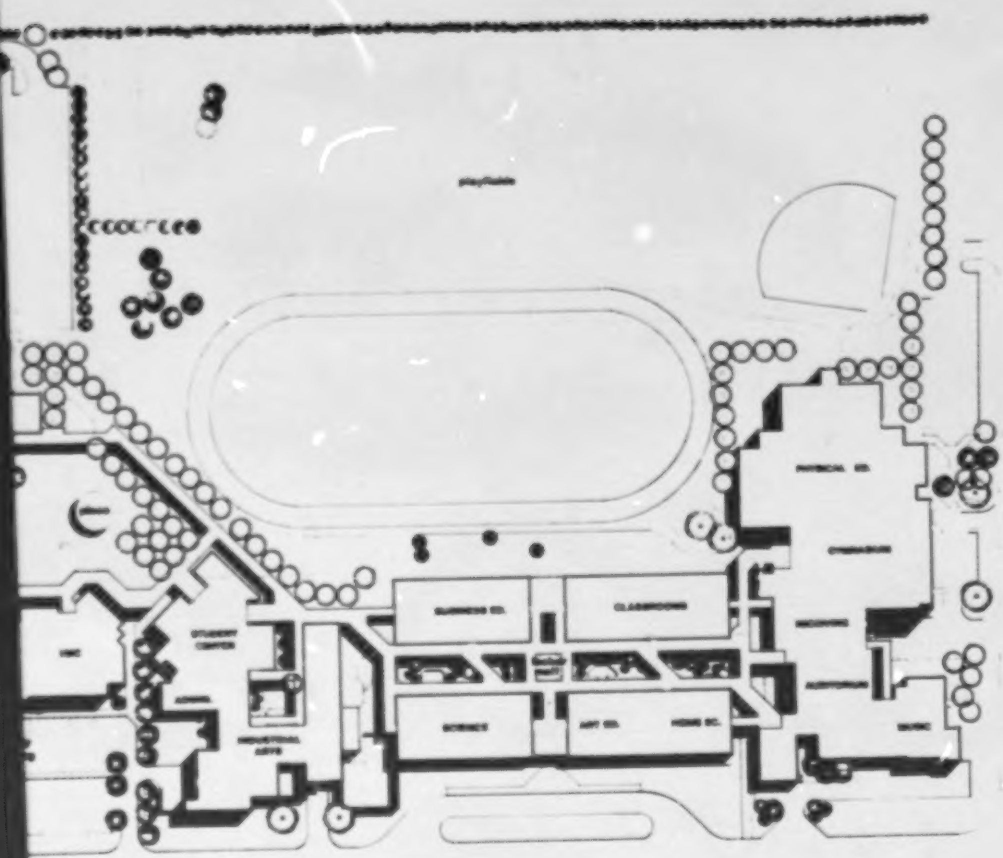

RONALD ELEMENTARY
BUTLER JUNIOR HIGH
C

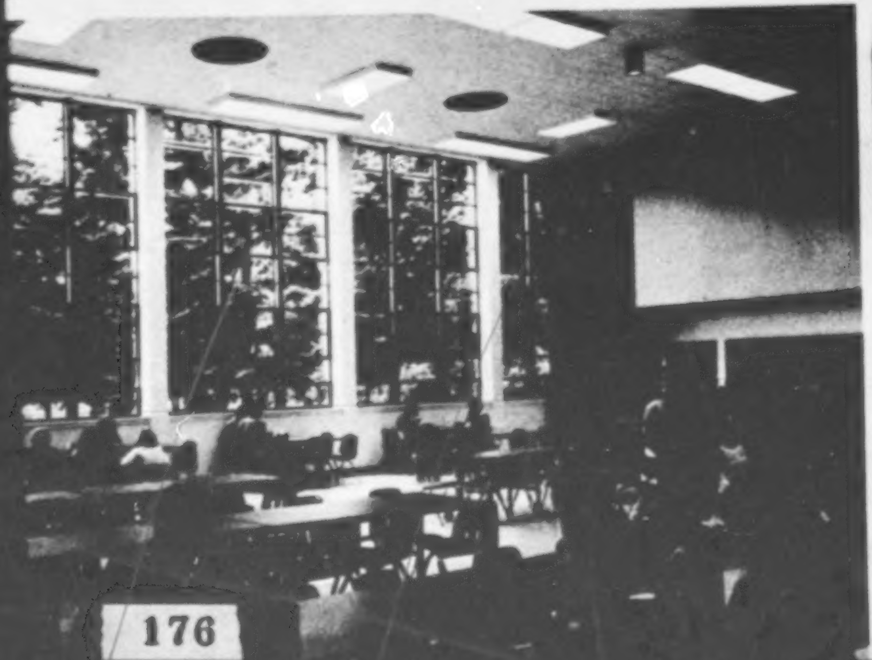
Existing Buildings


student parking
faculty parking

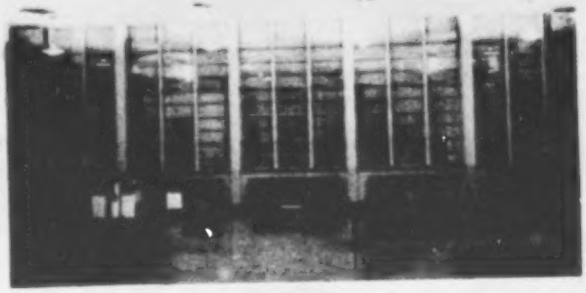
Modernization Plan




playfields
PHYSICAL ED.
GYMNASIUM
BUSINESS ED.
CLASSROOMS
STUDENT CENTER
AUDITORIUM
SCIENCE
ART ED.
HOME EC.
MUSIC
INDUSTRIAL ARTS



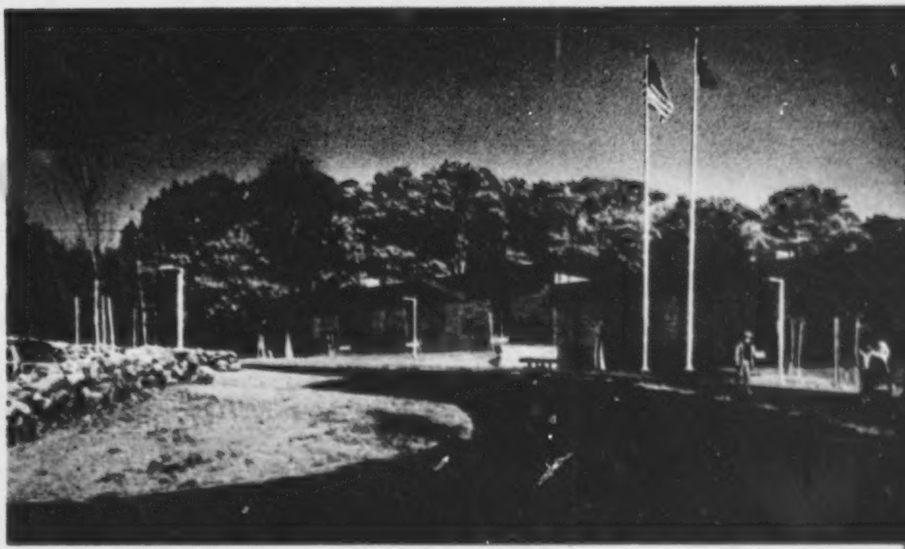
176

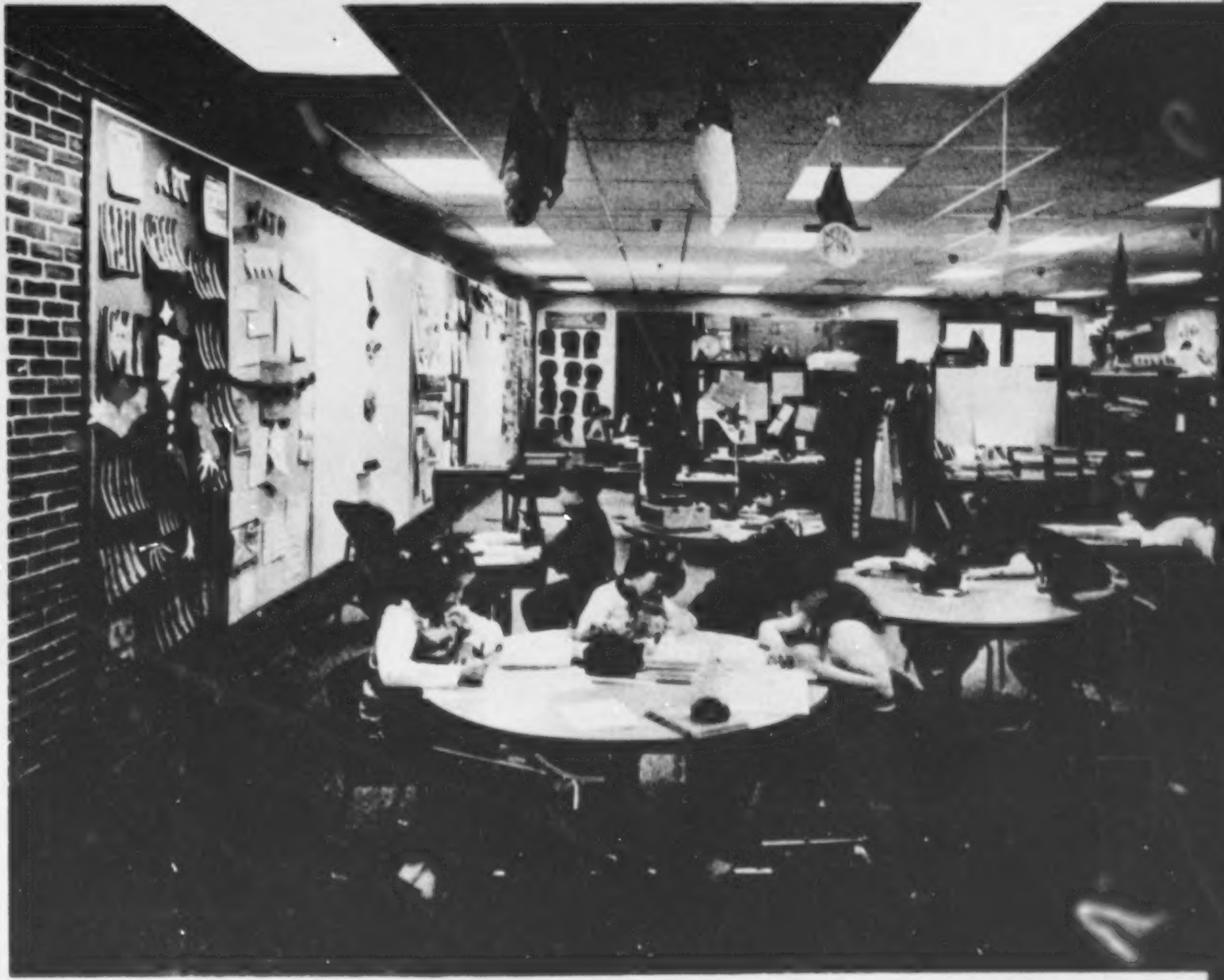


177

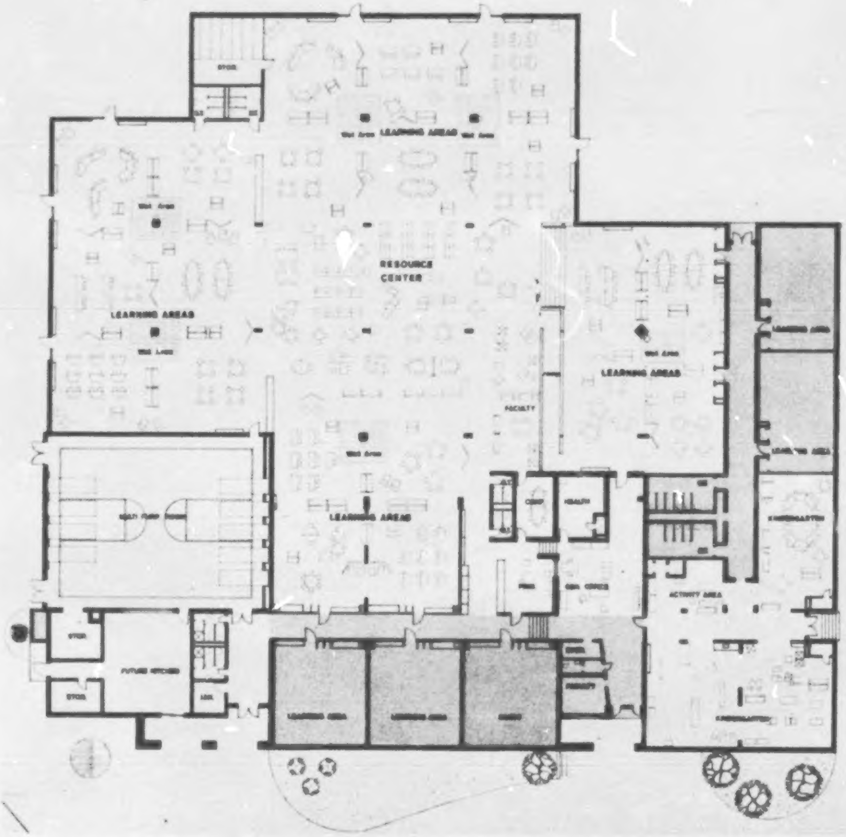
Village Elementary School
York, Maine

Eldridge M. Elkhorn, Superintendent
Warren H. Ashley, Architect





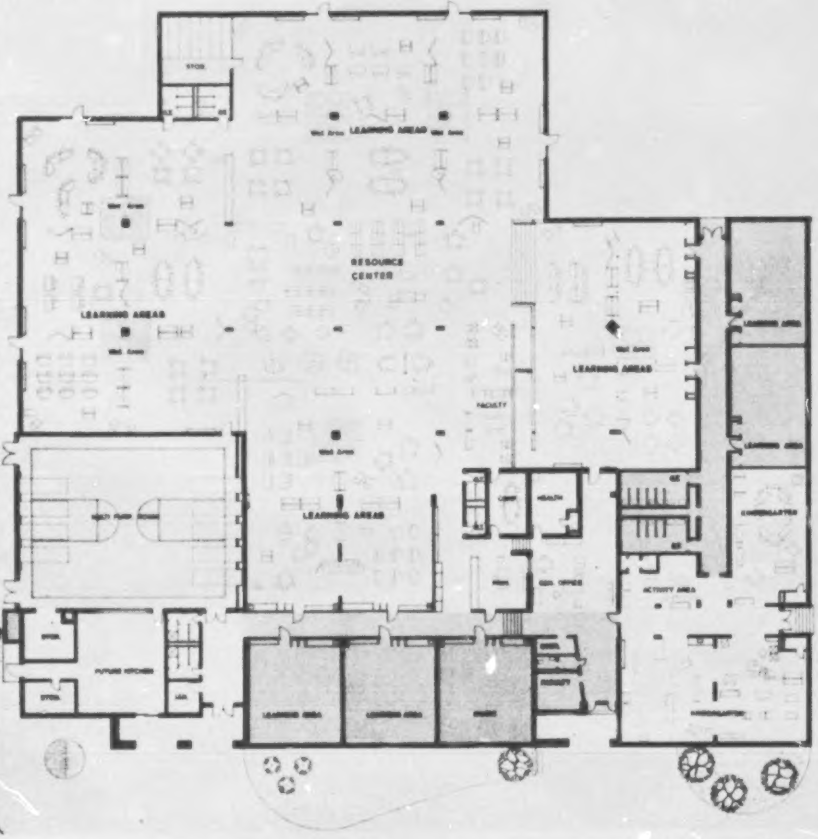
intendent
ct


STOR.
Wet Area
LEARNING AREAS
Wet Area
Wet Area
RESOURCE
CENTER
LEARNING AREAS
Wet Area
FACULTY
Wet Area
LEARNING AREAS
LEARNING AREA
LEARNING AREA
KINDERGARTEN
Wet Area
LEARNING AREAS
HEALTH
ACTIVITY AREA
STOR.
FUTURE KITCHEN
STOR.
LEARNING AREA
LEARNING AREA
KINDERGARTEN

York had an urgent nee
because they were closing d
two-room schools, and a fire
destroyed a three-story 10-r
was built shortly after the C
needed more space to accom
program. This old elementa
typical and average. It had
amount of glass, inadequate
roofs and no insulation in th
roof leaked and heating cos
higher each year. The budg
thrifty, no frills, low mainte

The renovation and ne
contains four learning pods
resource center, separate ki
administration in the center
can be the principal teacher
can be used evenings by the

Heating costs in the "r
been substantially reduced.
and roof were insulated, flu
and carpeting installed and
windows removed. Althou
school was substantially in
building is compact so that
exterior wall were reduced
and many thousand square
eliminated.


LEARNING AREAS
RESOURCE CENTER
LEARNING AREAS
LEARNING AREAS
FACULTY
LEARNING AREAS
LEARNING AREA
LEARNING AREA
HEALTH
KINDERGARTEN
ACTIVITY AREA
FUTURE KITCHEN
KINDERGARTEN

York had an urgent need for more space because they were closing down one- and two-room schools, and a fire suddenly destroyed a three-story 10-room school which was built shortly after the Civil War. They needed more space to accommodate a flexible program. This old elementary school was typical and average. It had an excessive amount of glass, inadequate insulation in the roofs and no insulation in the side walls. The roof leaked and heating costs were getting higher each year. The budget demanded a thrifty, no frills, low maintenance school.

The renovation and new addition contains four learning pods around a central resource center, separate kindergarten, administration in the center so the principal can be the principal teacher, and a gym that can be used evenings by the community.

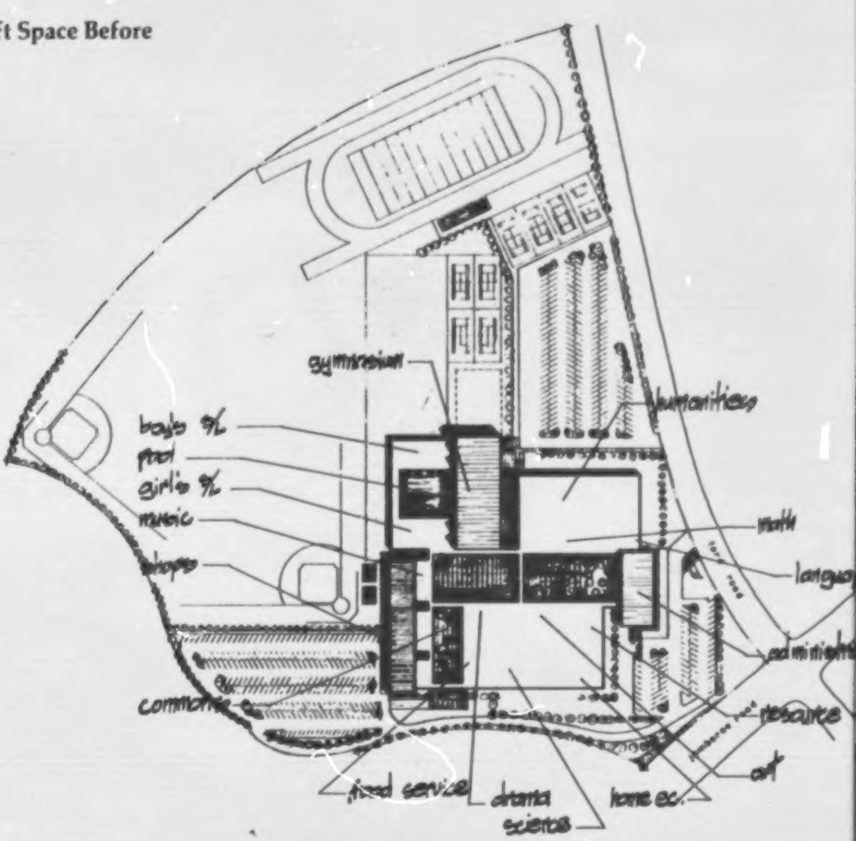
Heating costs in the "new" school have been substantially reduced. Exterior walls and roof were insulated, fluorescent lighting and carpeting installed and continuous windows removed. Although the size of the school was substantially increased the building is compact so that linear feet of exterior wall were reduced proportionately, and many thousand square feet of glass area eliminated.

Corona del Mar High School
Newport Beach, California

John R. Nicoll, Superintendent
William Blurock & Partners, Architects

Before redevelopment, most learning areas in this high school were self-contained classrooms in flexible loft space that had been designed for adaptability to future educational needs. The school was expanded from 2,000 to 3,000 student capacity and classrooms converted to open space to provide greater flexibility in development of class groupings and sizes. The new resource center becomes the focal point of the enlarged academic building.

Loft Space Before


gymnasium
humanities
boy's s/L
pool
girl's s/L
music
math
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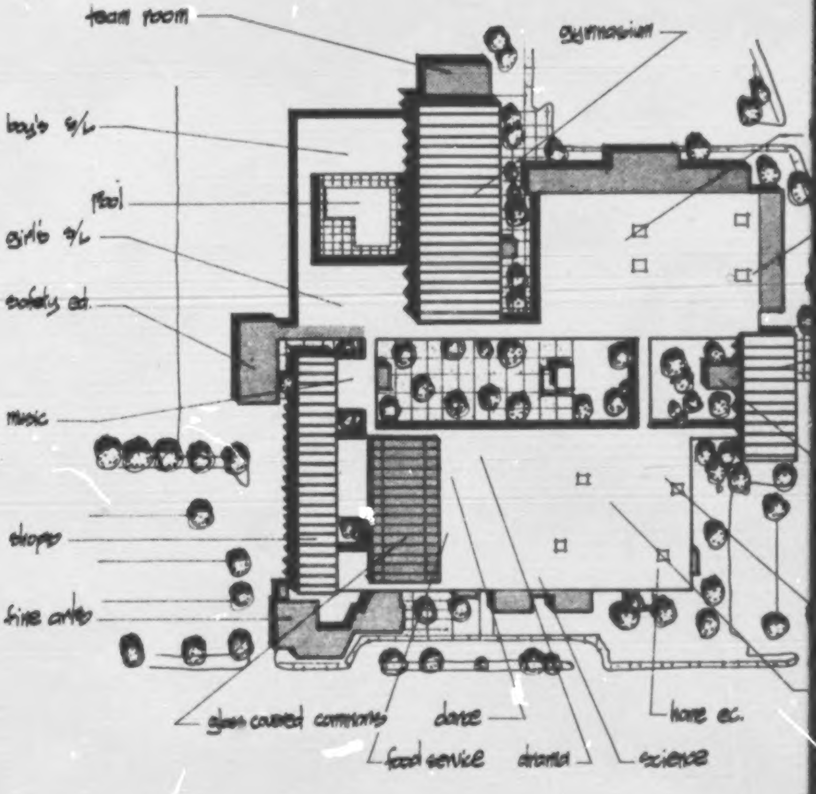
commons
resource
art
food service
drama
science
home ec.

Loft Space After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gymnasium
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pool
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glass covered commons
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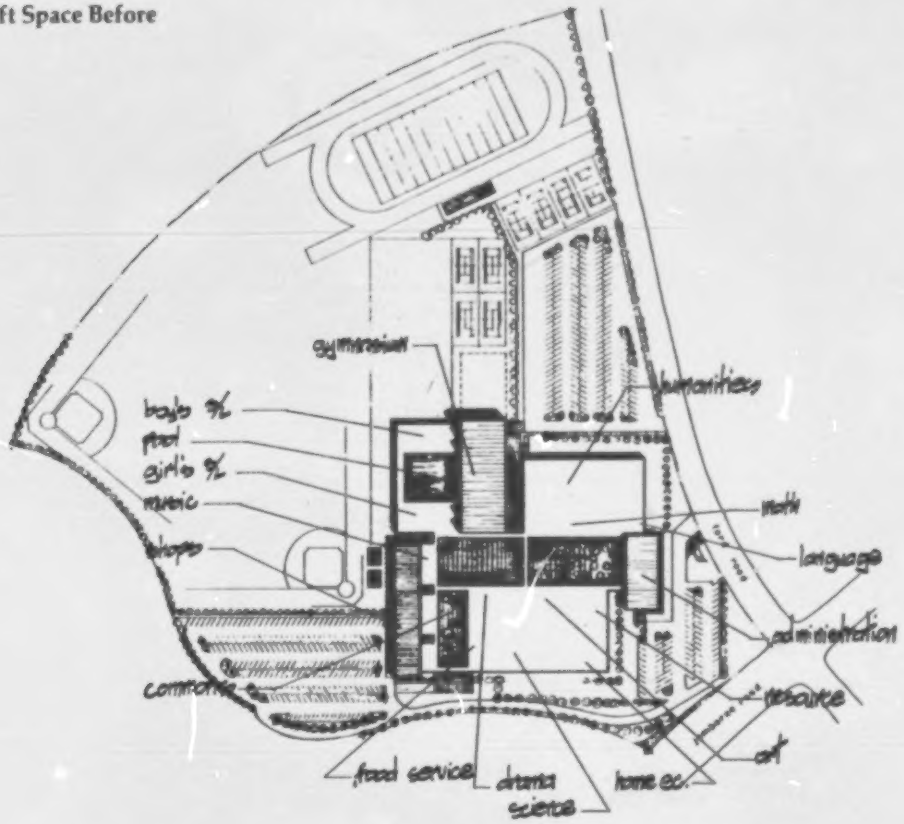
Loft Space Before


gymnasium
humanities
boy's l/l
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shops
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commons
resource
art
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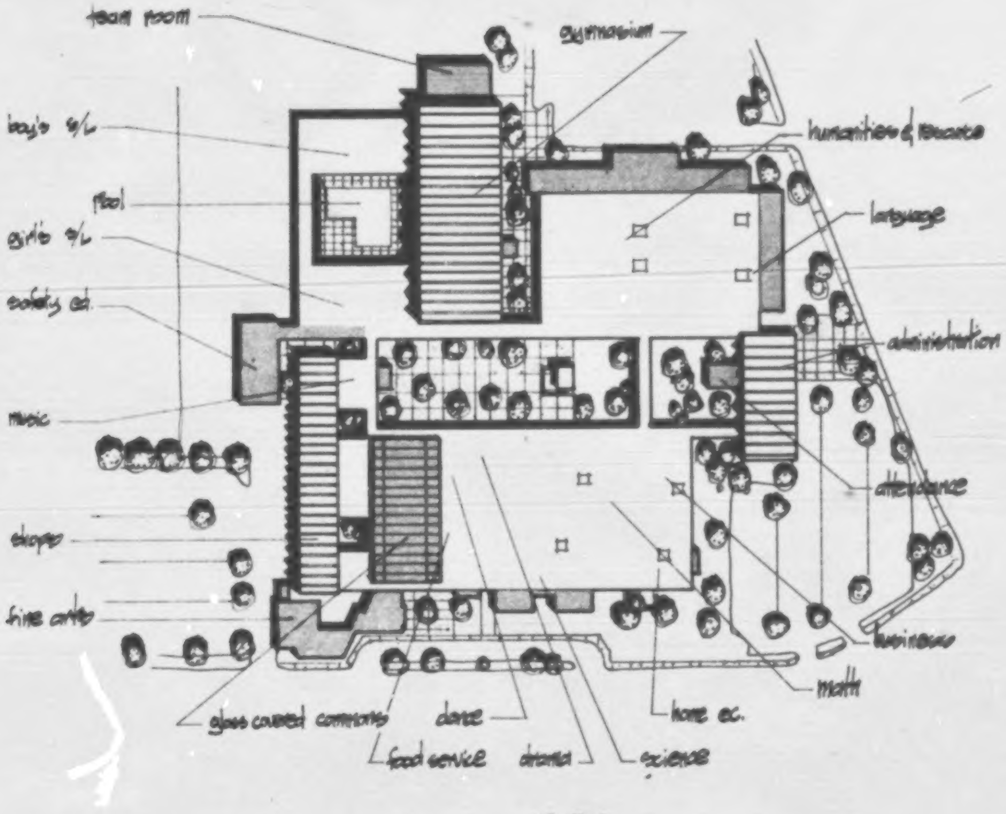
science
home ec.

Loft Space After


team room
gymnasium
boy's l/l
humanities & resource
pool
language
girl's l/l
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administration
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attendance
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business
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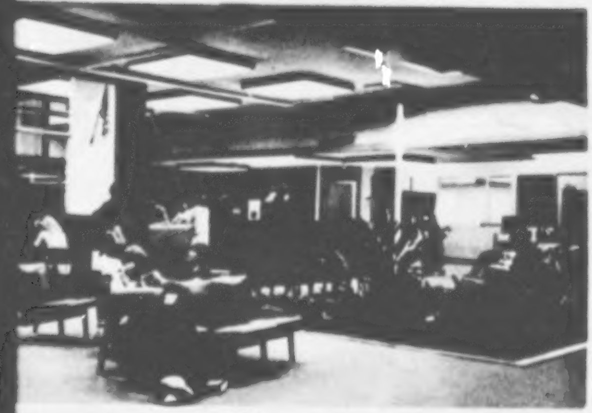
dance
home ec.
food service
drama
science



Chevy Chase Elementary School
Montgomery County, Maryland

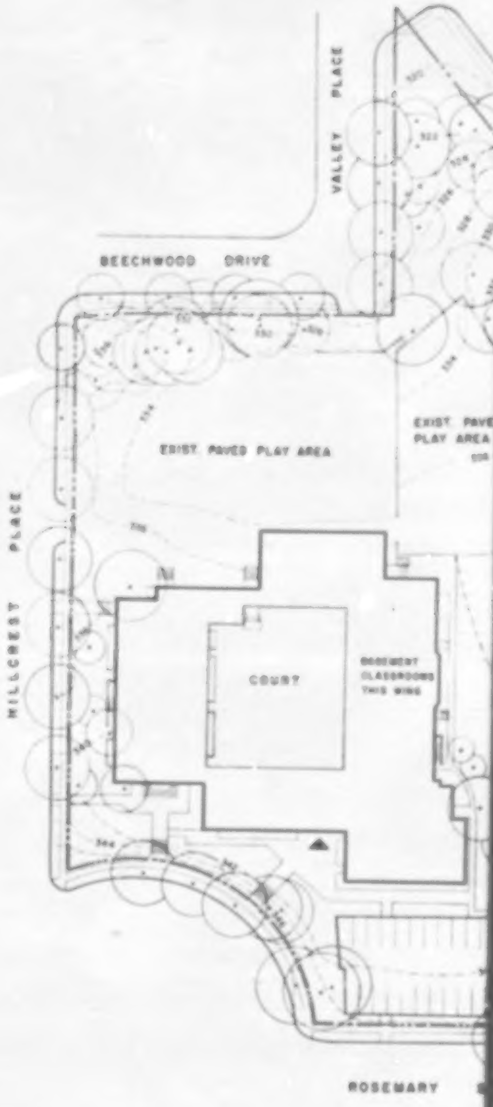
Charles M. Bernardo, Superintendent
Chapman & Miller, Architects

This school began as a two-room building in this neighborhood 75 years ago. The community is proud of the school's long reputation and of the children who have followed in the footsteps of their parents in the school. But the time for change has long since arrived.

The existing building started with a single wing in 1930 after outgrowing earlier facilities. Later a duplicate wing was added, and then other wings were run compactly around a light court. When need for more space became critical, basement store rooms became classrooms.

Like many other older schools, the mechanical and electrical systems gave out. The "add-on" history of the school made it too difficult to rearrange and bring up to date. The library, for example, is out in "right field." Therefore, the program demanded "turn-around" changes. The problem was how to replace basement classrooms, add a gymnasium, and reorganize the floor plan, without robbing any scarce outdoor space from this cramped 3.9 acre elementary school site.

The solution was to remove most of the 1930 wing, including basement classrooms, add a new gym in this location to save scarce outside area, roof over the seldom-used court to obtain replacement space for basement classrooms, and include the media center in this favorable, central location. Existing teaching and administrative spaces were modified and modernized and the existing library at far end of building converted to kindergarten rooms, a much better use for this location. Furthermore, scarce outdoor space was left intact.



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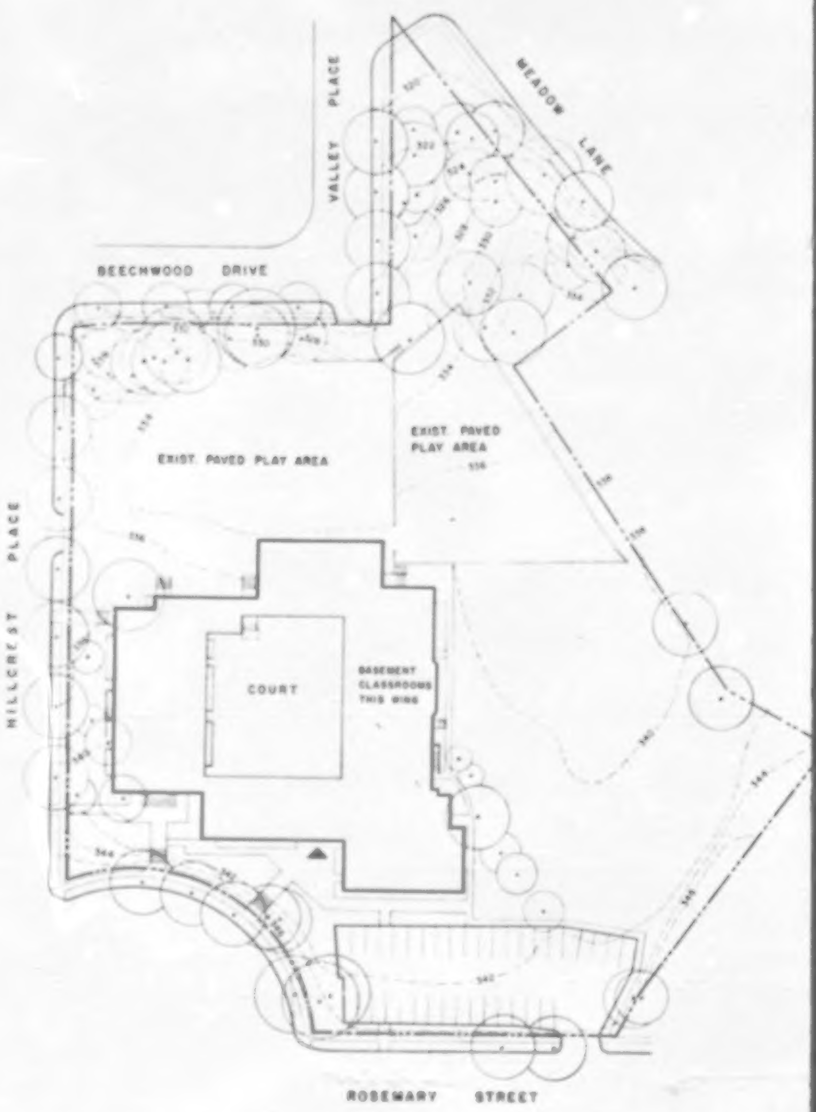
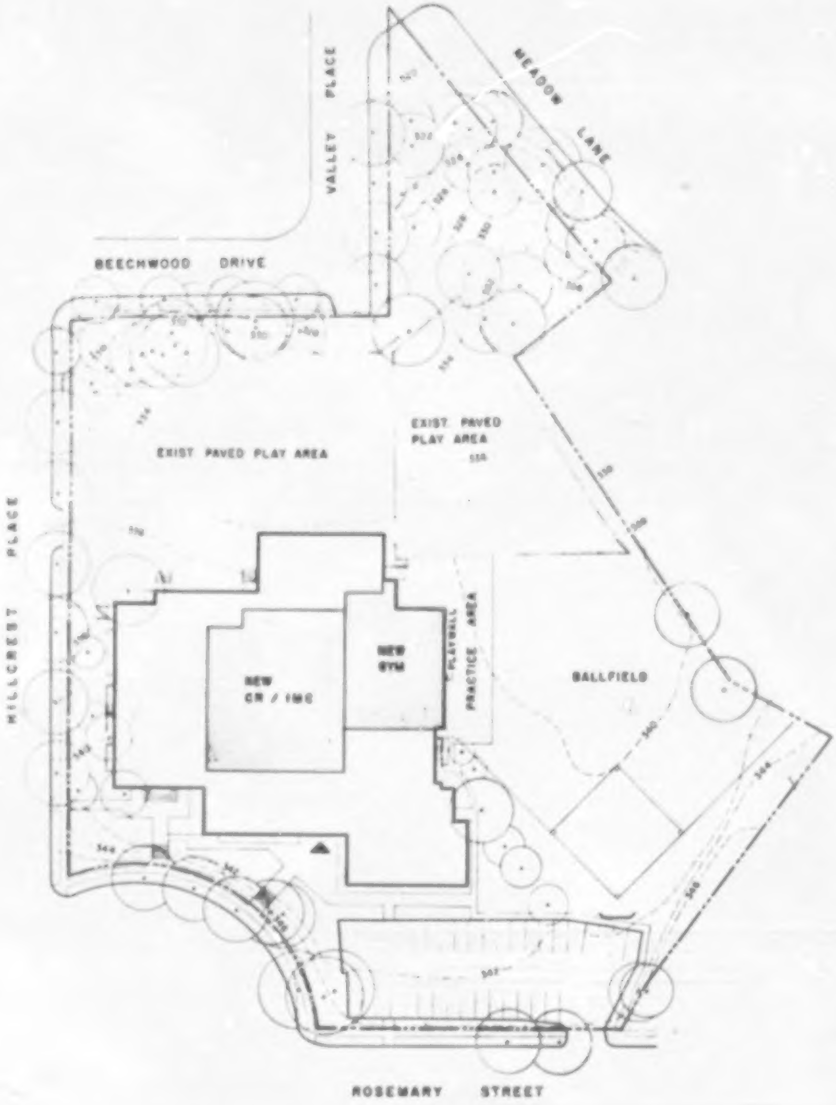
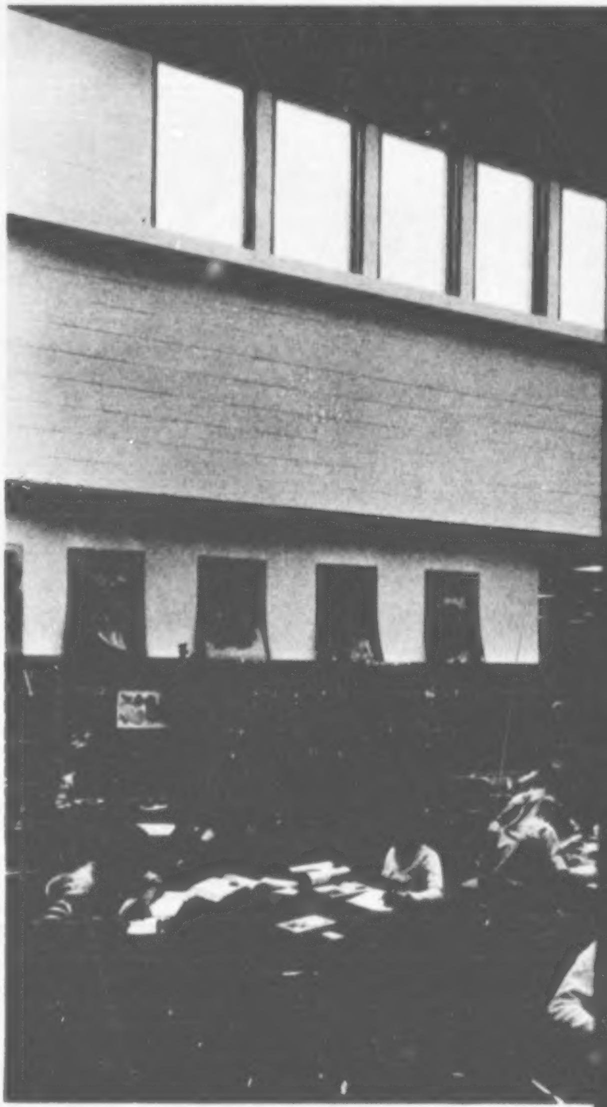
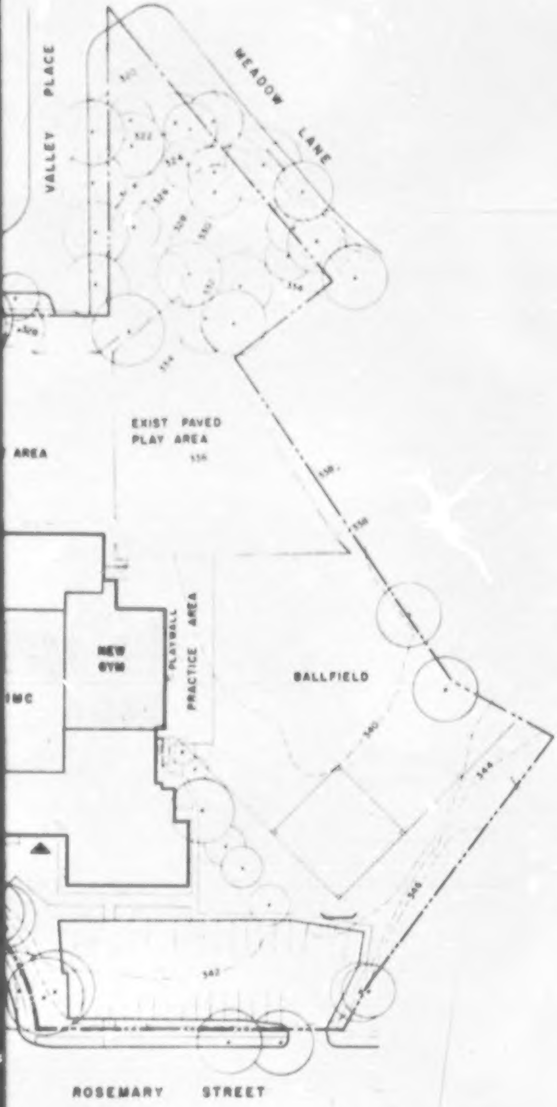

VALLEY PLACE
MEADOW LANE
BEECHWOOD DRIVE
EXIST. PAVED PLAY AREA
EXIST. PAVED PLAY AREA
HILLCREST PLACE
COURT
BASEMENT CLASSROOMS THIS WING
ROSEMARY STREET


VALLEY PLACE
MEADOW LANE
BEECHWOOD DRIVE
EXIST PAVED PLAY AREA
EXIST. PAVED PLAY AREA
HILLCREST PLACE
NEW CR / IMC
NEW GYM
PLAYWALL
PRACTICE AREA
BALLFIELD
ROSEMARY STREET




VALLEY PLACE
MEADOW LANE
EXIST PAVED PLAY AREA
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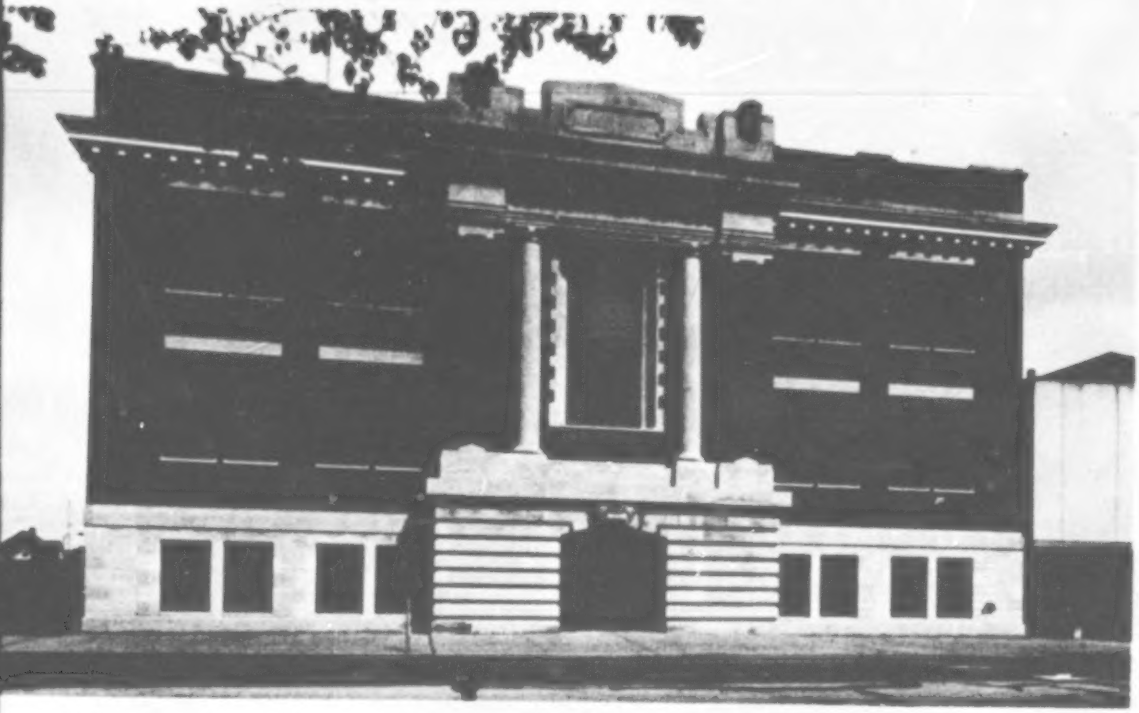
NEW GYM
PLAYWALL
PRACTICE AREA
BALLFIELD
IMC
ROSEMARY STREET

188

189



Elkhart County Office Annex
To County Courts Building

Elkhart, Indiana
K/M Associates, Architects

Probably the two most
links between people and g
county building and the sch
Elkhart County, Indiana, th
been combined. On the site
Elkhart High School in the
of the city is a new county

All of the proud, old h
gone. One section of the th
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office annex. High up abov
remains the legend "Elkhar
carved in stone. New wind
building's street face some,
resisted the temptation to d
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high school. The new build
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school is primarly offices.

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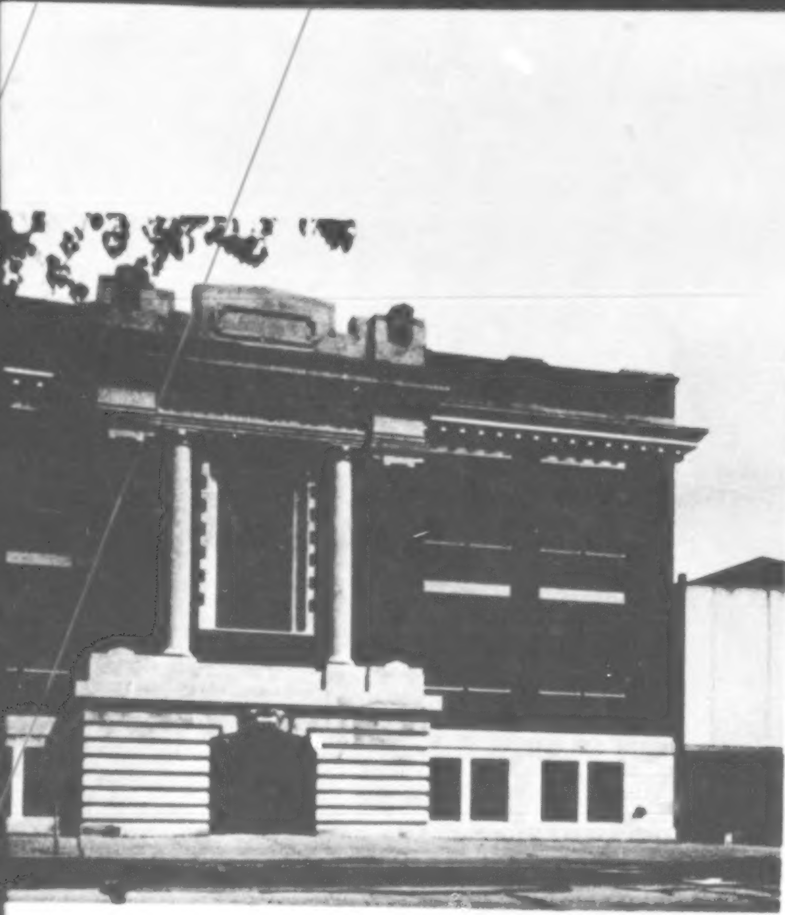
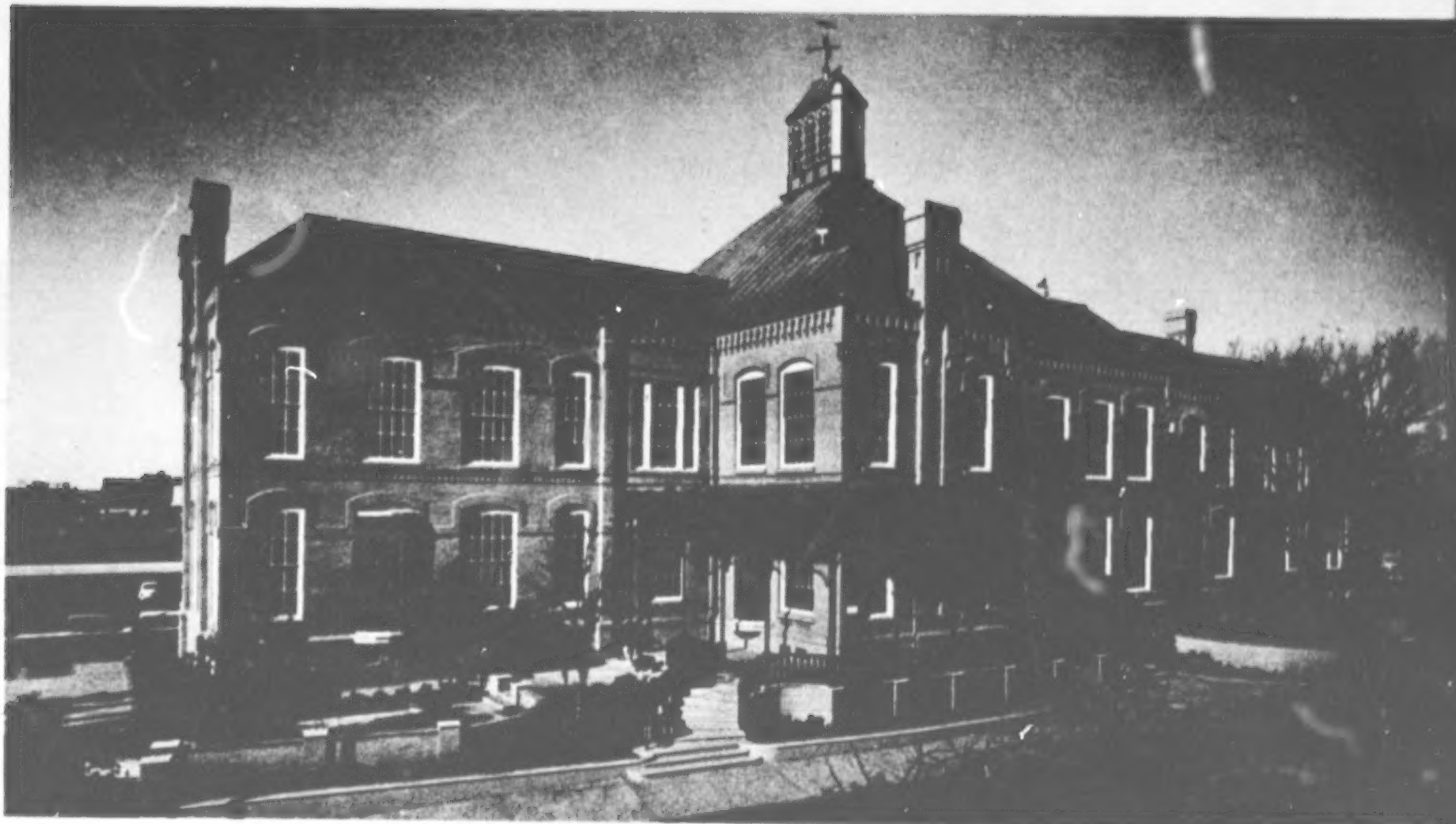
county offices were able to
at a much earlier date in pe



Probably the two most fundamental links between people and government are the county building and the schoolhouse. In Elkhart County, Indiana, these two links have been combined. On the site of the old Elkhart High School in the downtown section of the city is a new county courts building.

All of the proud, old high school is not gone. One section of the three-story school remains and has been remodeled as a county office annex. High up above the entrance remains the legend "Elkhart High School" carved in stone. New windows change the building's street face some, but the architects resisted the temptation to disguise the former use with a fake facade. True, where sections were torn away at the sides and back, a new brick exterior treatment is used, but there is no doubt that the annex used to be part of a high school. The new building houses courts, jail and the other special areas. The former school is primarily offices.

This respect for a bit of the past has it's practical side, too. The former school was remodeled at less cost than new construction and, by doing this first, the overcrowded county offices were able to begin functioning at a much earlier date in permanent quarters.



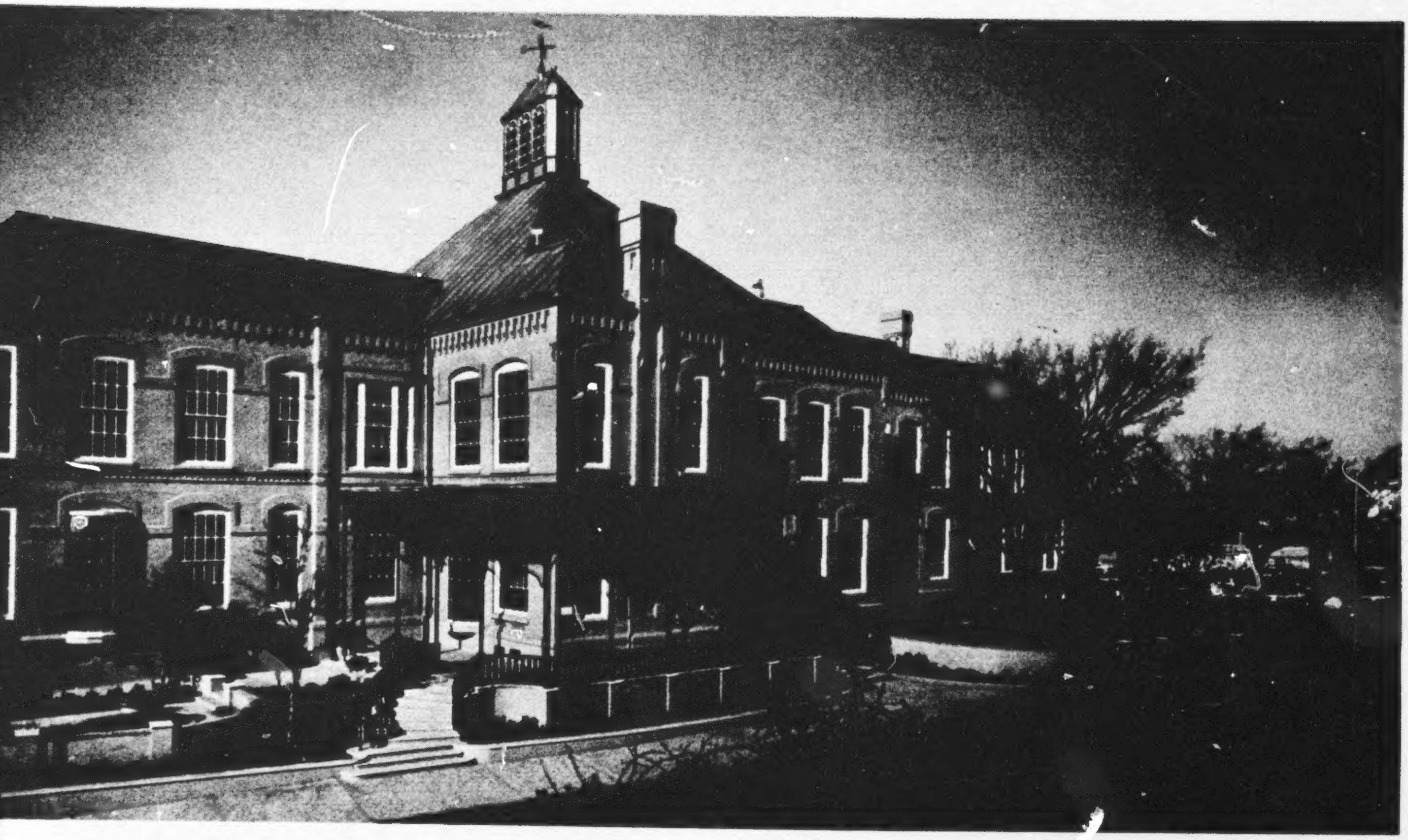
Cumberland Hill
Dallas, Texas

The Cumberland Hill S
downtown Dallas, was erect
Independent School System
the first brick school in the c
replacing an older wooden s
the same Trinity River hillsi

From 1888 to 1963, the
School was operated by the
System as an elementary sch
from 1963 to 1969 the build
a vocational school, training
such as welders, carpenters,
seamstresses, bricklayers an
working laboratories.

SEDCO completed an
restoration program in Dec
transforming the Cumberla
a modern headquarters for
international operations. T
renovation has won awards
societies and in 1971 it recei
marker from the Texas Hist
Committee.

SEDCO, Inc. is primar
contract drilling firm whic
diversified services to the p



The Cumberland Hill School, located in downtown Dallas, was erected by Dallas Independent School System in 1888. It was the first brick school in the city of Dallas, replacing an older wooden school located on the same Trinity River hillside prior to 1860.

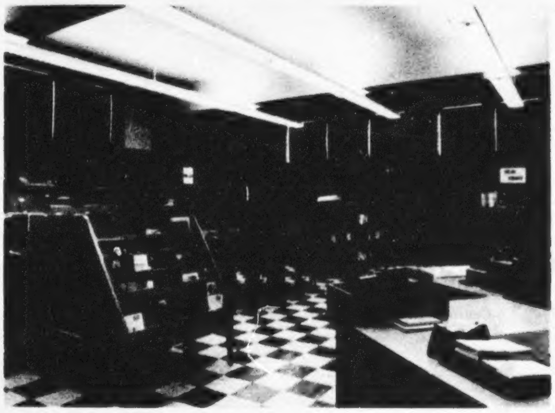
From 1888 to 1963, the Cumberland Hill School was operated by the Dallas School System as an elementary school. However, from 1963 to 1969 the building was used as a vocational school, training tradesmen such as welders, carpenters, commercial seamstresses, bricklayers and electricians in working laboratories.

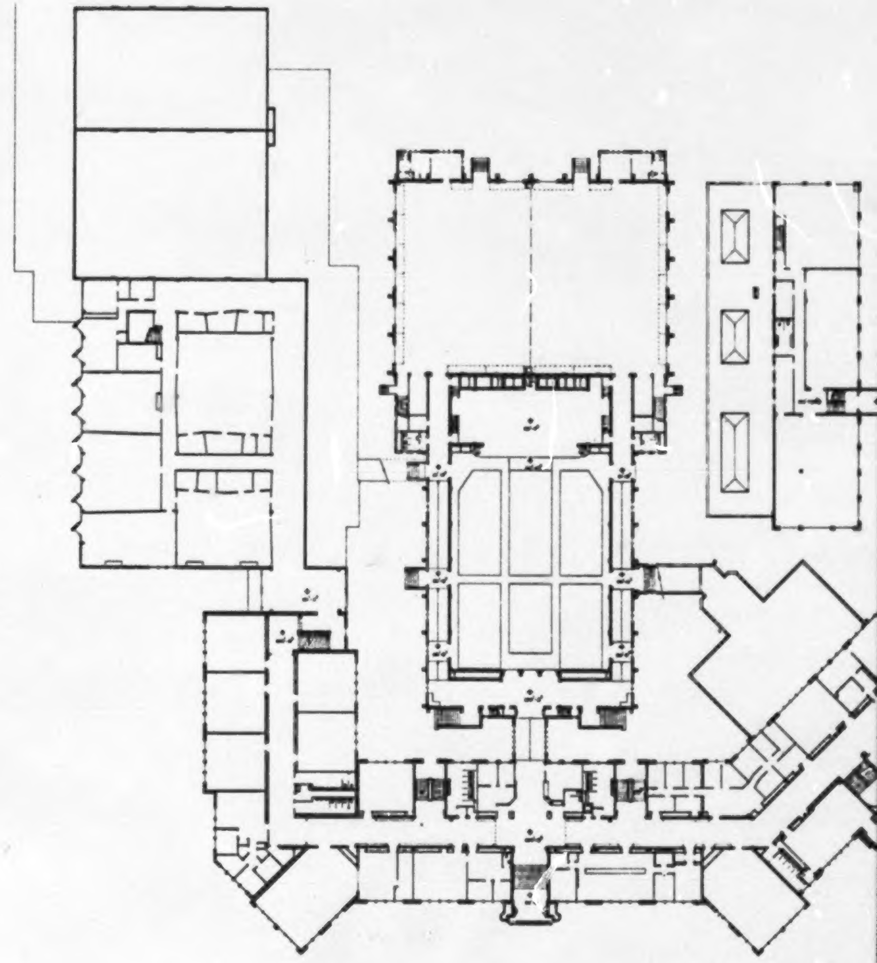
SEDCO completed an extensive restoration program in December 1970 transforming the Cumberland Hill School into a modern headquarters for SEDCO's international operations. The building's renovation has won awards from various societies and in 1971 it received an historical marker from the Texas Historical Survey Committee.

SEDCO, Inc. is primarily an international contract drilling firm which provides various diversified services to the petroleum industry.

East High School
Madison, Wisconsin

Douglas Ritchie, Superintendent
Flad & Associates, Architects





First Floor Before

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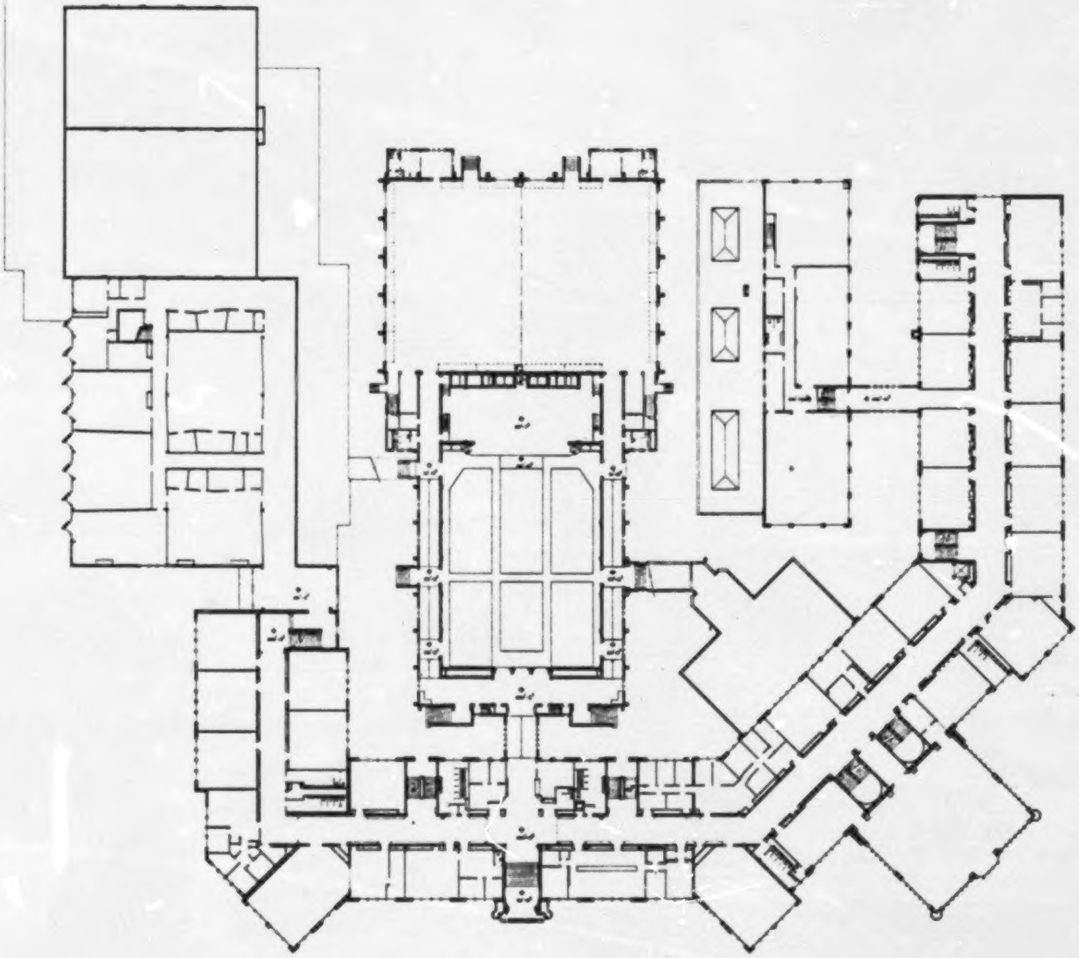
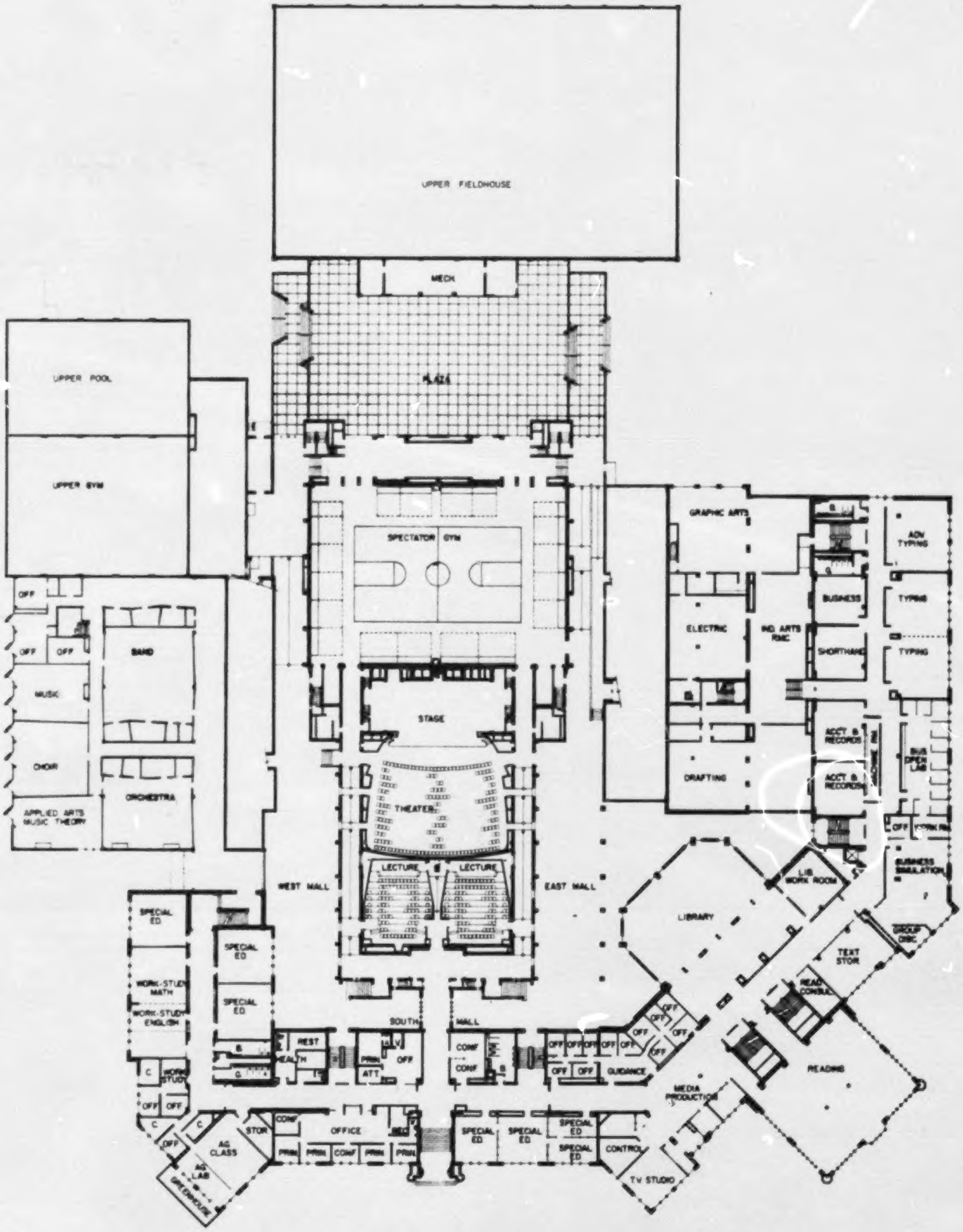


First Floor Before


UPPER FIELDHOUSE
MECH
PLAZA
UPPER POOL
UPPER GYM
SPECTATOR GYM
OFF
OFF
OFF
BAND
MUSIC
CHOIR
ORCHESTRA
APPLIED ARTS MUSIC THEORY
STAGE
THEATER
LECTURE
LECTURE
WEST MALL
EAST MALL
SPECIAL ED
SPECIAL ED
WORK-STUDY MATH
WORK-STUDY ENGLISH
SPECIAL ED
SOUTH
HALL
REST
HEALTH
PRIN
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SPECIAL ED
SPECIAL ED
CONTROL
TV STUDIO
MEDIA PRODUCTION
GRAPHIC ARTS
ELECTRIC
IND. ARTS RMC
DRAFTING
BUSINESS
SHORTHAND
ACCT & RECORDS
ACCT & RECORDS
ADV TYPING
TYPING
TYPING
BUS OPEN LAB
OFF
WORK RM
BUSINESS SIMULATION
LIB WORK ROOM
LIBRARY
GROUP DISC
TEXT STOR
READ CONSUL
OFF
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READING

First Floor After

Large, old high schoo
of the biggest challenges f
The plant is a combinatior
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problems and more.

The original building
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making it possible to remo
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Before any work was
facility was master-planne
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Recognizing the possible li
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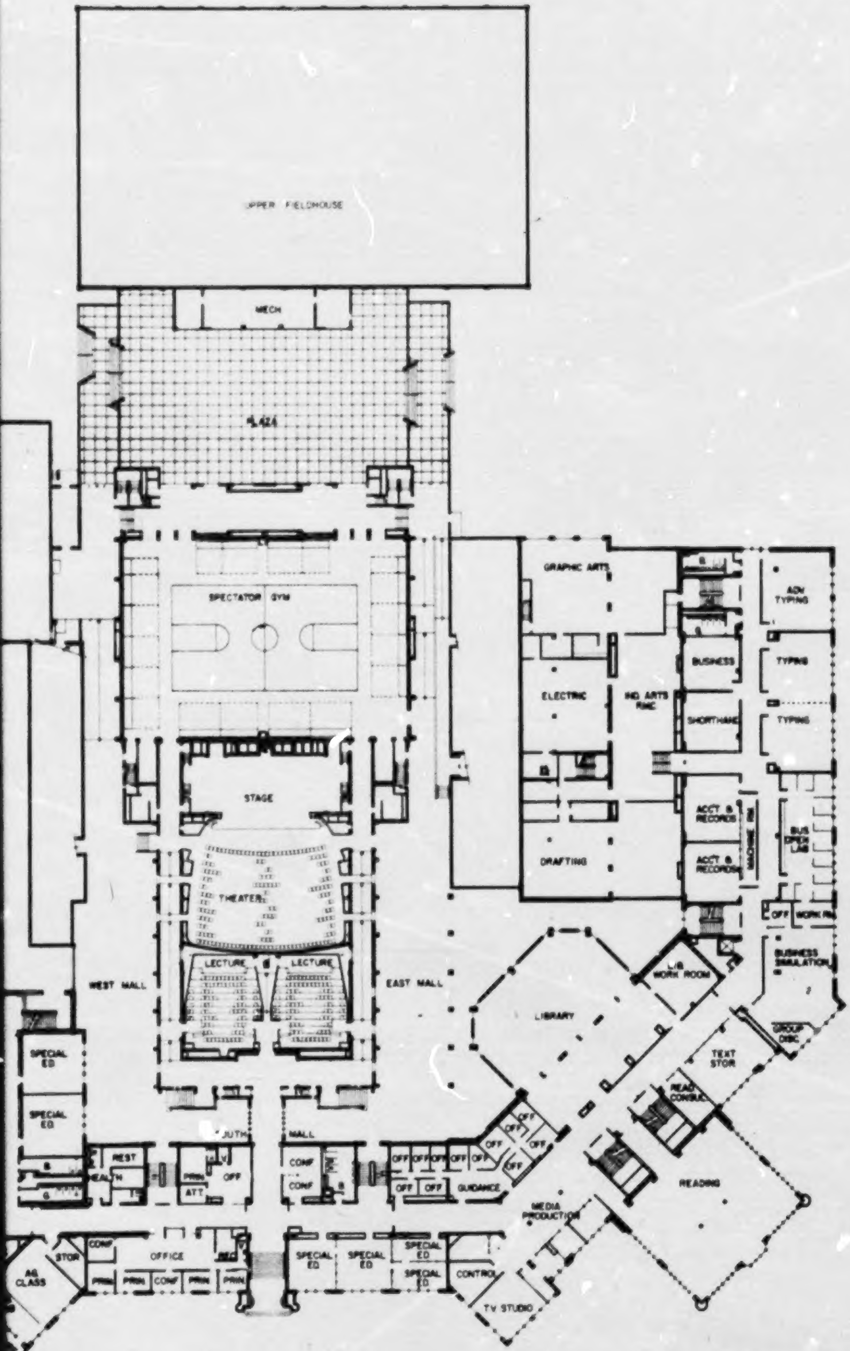
UPPER FIELDHOUSE
MECH
PLAZA
SPECTATOR GYM
GRAPHIC ARTS
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BUSINESS
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ELECTRIC
IND ARTS
SHORTHAND
TYPING
STAGE
ACCT & RECORDS
ACCT & RECORDS
MACHINE RM
BUS OPEN LAB
DRAFTING
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OFF
WORK RM
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LECTURE
LECTURE
WEST MALL
EAST MALL
LIBRARY
GROUP DISC
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SPECIAL ED
SPECIAL ED
SOUTH MALL
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HEALTH
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READING
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SPECIAL ED
SPECIAL ED
SPECIAL ED
SPECIAL ED
CONTROL
TV STUDIO

Large, old high schools often present one of the biggest challenges facing a designer. The plant is a combination of additions. A large student body complicates the work schedule. Existing spaces have little relationship to the stated desired educational program. East High School presented these problems and more.

The original building was constructed in 1922, followed by four major additions prior to 1970. The various additions had added more space, but they also added narrow alleys between buildings which were constant maintenance and security problems. Furthermore, not all additions maintained the same floor elevation, resulting in more confusion to an already complicated circulation problem. The existing high school is structually sound reinforced concrete making it possible to remove interior walls without costly structural revisions.

Before any work was begun, the entire facility was master-planned to meet the client's stated desire of a facility compatible with the dstrict's two new high schools. Recognizing the possible limitations of funds to complete the entire program at one time and the problem of scheduling construction work for a minimum of interference with the normal school operation, the project was divided into four phases. The first three are complete and phase four is under construction. Much space was originally devoted to horizontal circulation. To get larger and more flexible spaces, a new circulation pattern was developed using the existing stairways as vertical circulation. By enclosing the alleys between buildings, new horizontal circulation and student congregation spaces were provided which are readily accessible to all facilities—welcome spaces during long Wisconsin winters.

Batavia City Schools
Batavia, New York

Roy Dexheimer, Superintendent
Sargent, Webster, Crenshaw and Folley,
Architects

WIDEN YOUR WORLD

The program called for r
restoration of the district's va
notably the middle school an
use library owned and operat

The library is a romanes
whose interior required gene
New lights improve reader co
the space internally. New ca
repainting were designed to e
serene atmosphere totally ad
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building's unique exterior. T
woodwork was restored and
shelving was added. New m
electrical systems were instal
energy efficiency.

The junior high school
three-story rectangular build
expansion potential because
construction and fixed walls.
relieved the strain by removi
gymnasium to an addition co
passage. The vacated space
developed into a music suite
cafeteria and food service fa
rehabilitation removed many
replaced them with bright, c
spaces. Partitions, when po
removed and spaces enlarge
required spaces for shops, st
activities. Mechanical and e
were updated.

dent
and Folley,

WIDEN YOUR WORLD

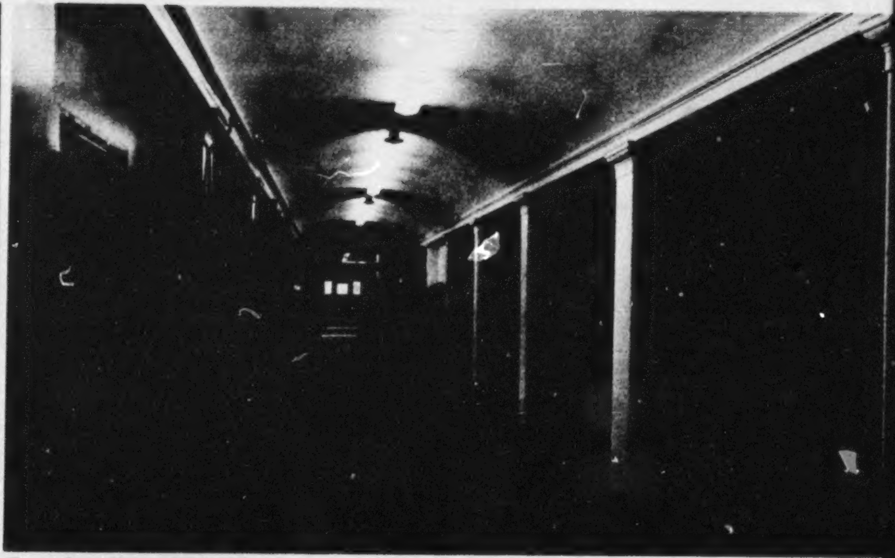
The program called for rehabilitation and restoration of the district's various schools, notably the middle school and a community-use library owned and operated by the district.

The library is a romanesque structure whose interior required general restoration. New lights improve reader comfort and open the space internally. New carpeting and repainting were designed to encourage a serene atmosphere totally adapted to studying or reading, and in harmony with the building's unique exterior. The original woodwork was restored and matching shelving was added. New mechanical and electrical systems were installed for improved energy efficiency.

The junior high school was a stereotype, three-story rectangular building, limited in expansion potential because of its heavy construction and fixed walls. The re-creation relieved the strain by removing the central gymnasium to an addition connected with a passage. The vacated space was then developed into a music suite and expanded cafeteria and food service facilities. General rehabilitation removed many drab areas and replaced them with bright, colorful open spaces. Partitions, when possible, were removed and spaces enlarged to provide required spaces for shops, staff and student activities. Mechanical and electrical systems were updated.

Music room after rehabilitatio

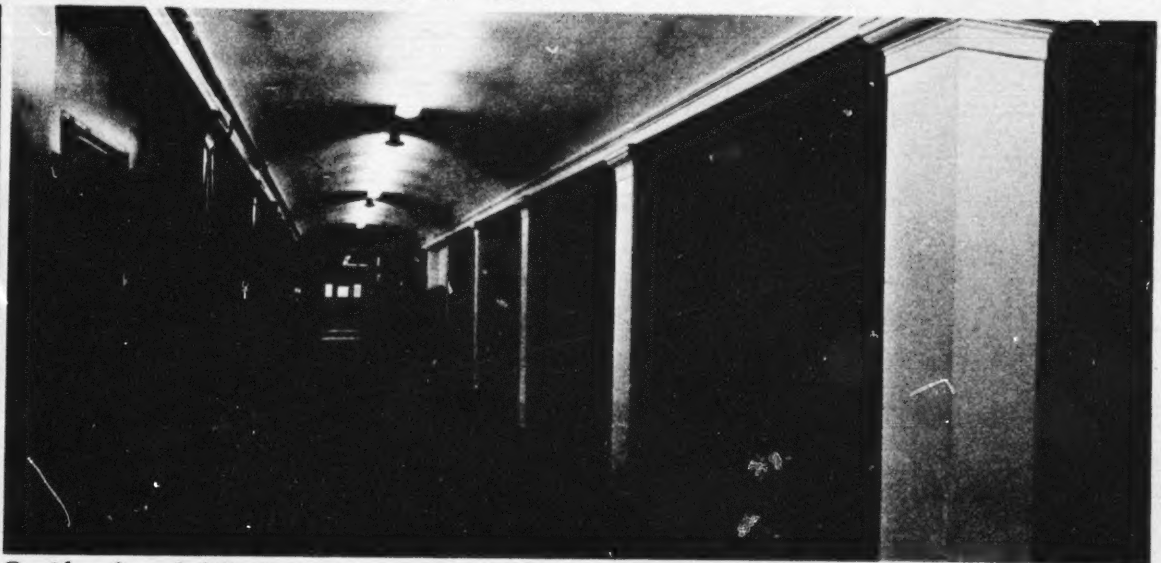
Corridor before rehabilitation



Corridor after rehabilitation

Music room after rehabilitation

on



Corridor after rehabilitation

Kirkwood Senior High School
Kirkwood, Missouri

Raymond Waier, Superintendent
Wm. B. Ittner, Architects

Entry to the LRC

View from LRC toward Open Reading Court

View of LRC from Balcony

ol

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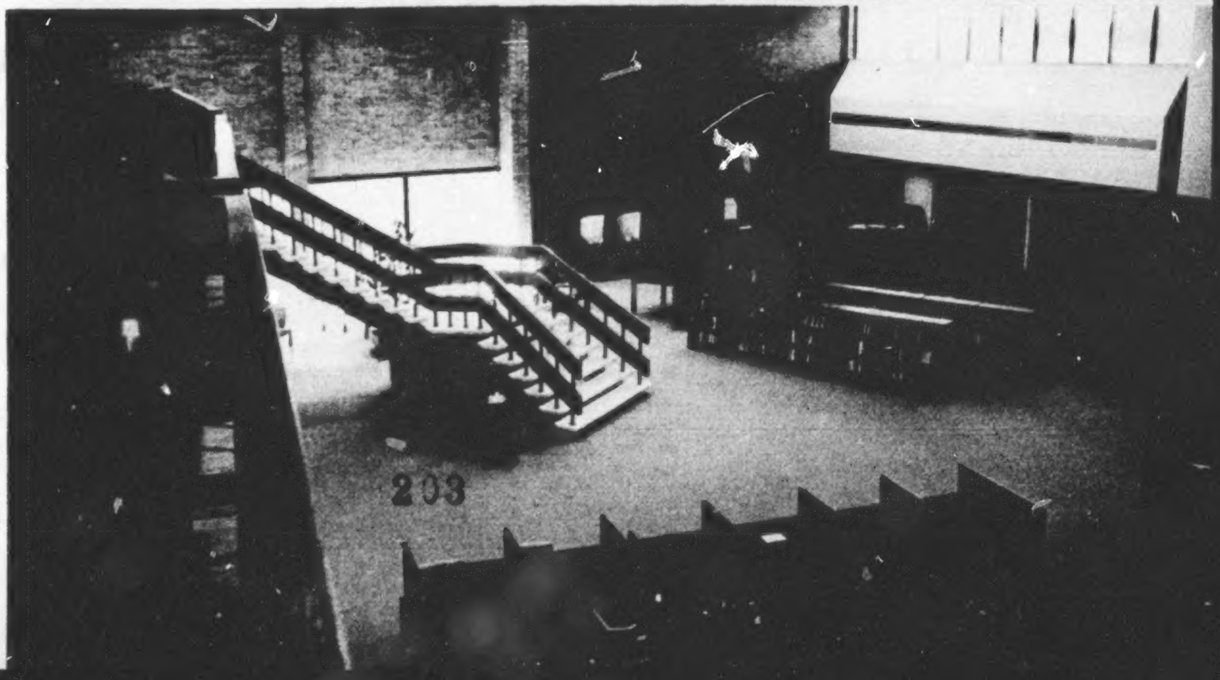
Entry to the LRC

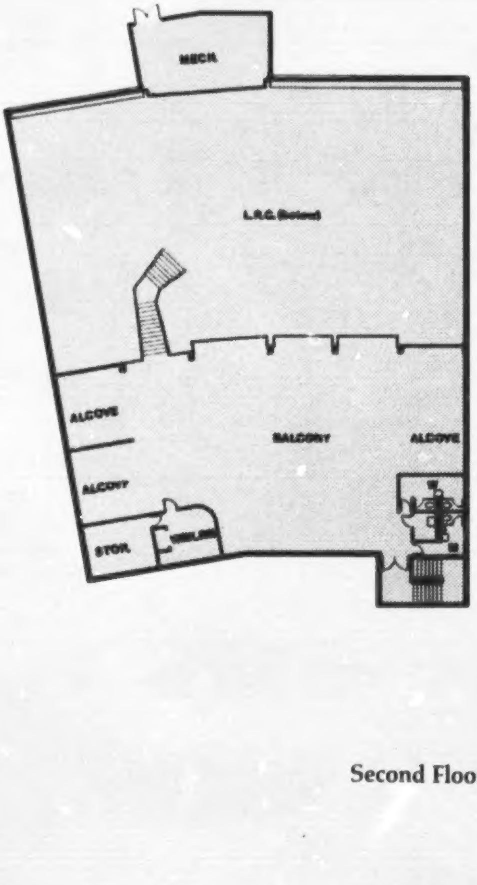
ward Open Reading Court



iew of LRC from Balcony

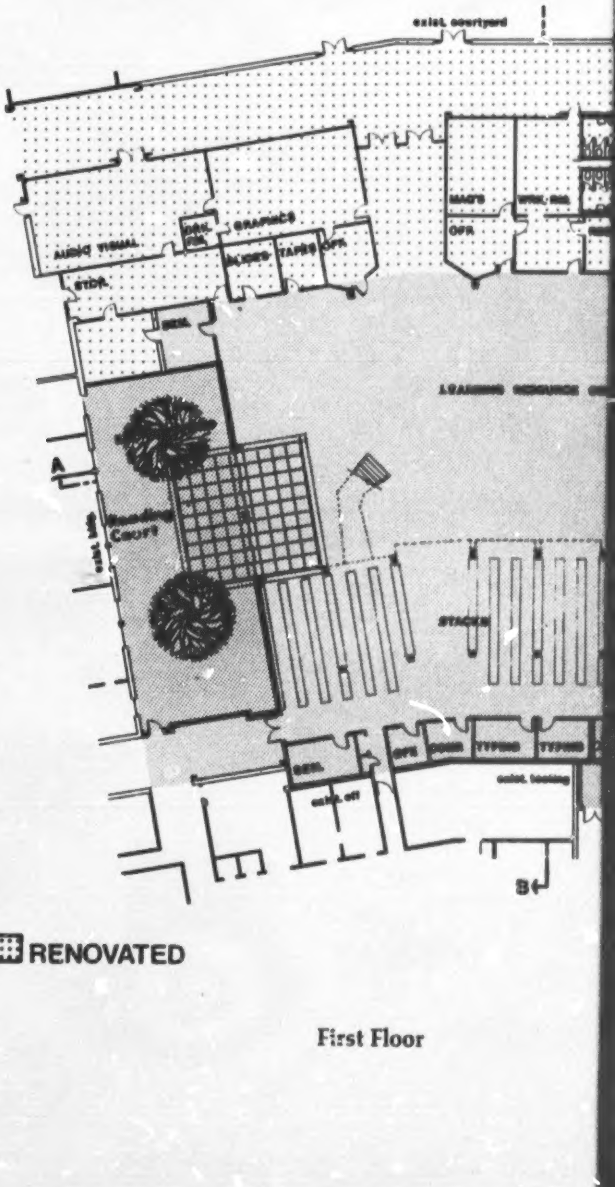
An open courtyard near the center of the campus plan high school for Kirkwood, Missouri provided an excellent home for their new learning resource center.

Fortunately, the courtyard was large enough to allow generous new corridors and access areas to the new center. A small outdoor reading courtyard was retained as a landscaped, enclosed study/reading area.


MECH.
L.R.C. (below)
ALCOVE
BALCONY
ALCOVE
ALCOVE
STOR.

▭ NEW ▦ RENOVATED

Second Floor


exist. courtyard
AUDIO VISUAL
GRAPHICS
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STOR.
MAG'S
WRK. RM.
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LEARNING RESOURCE C
Reading Court
exist. bldg.
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STACKS
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TYPING
TYPING
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First Floor

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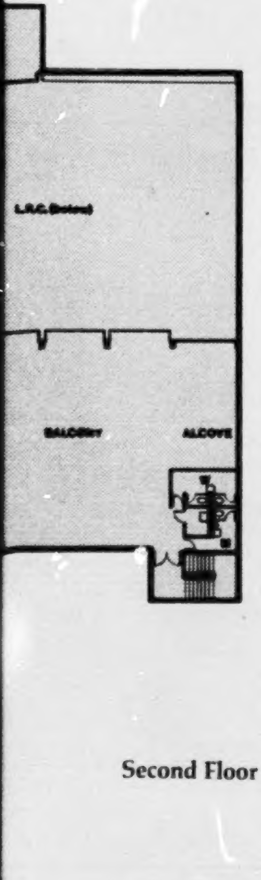
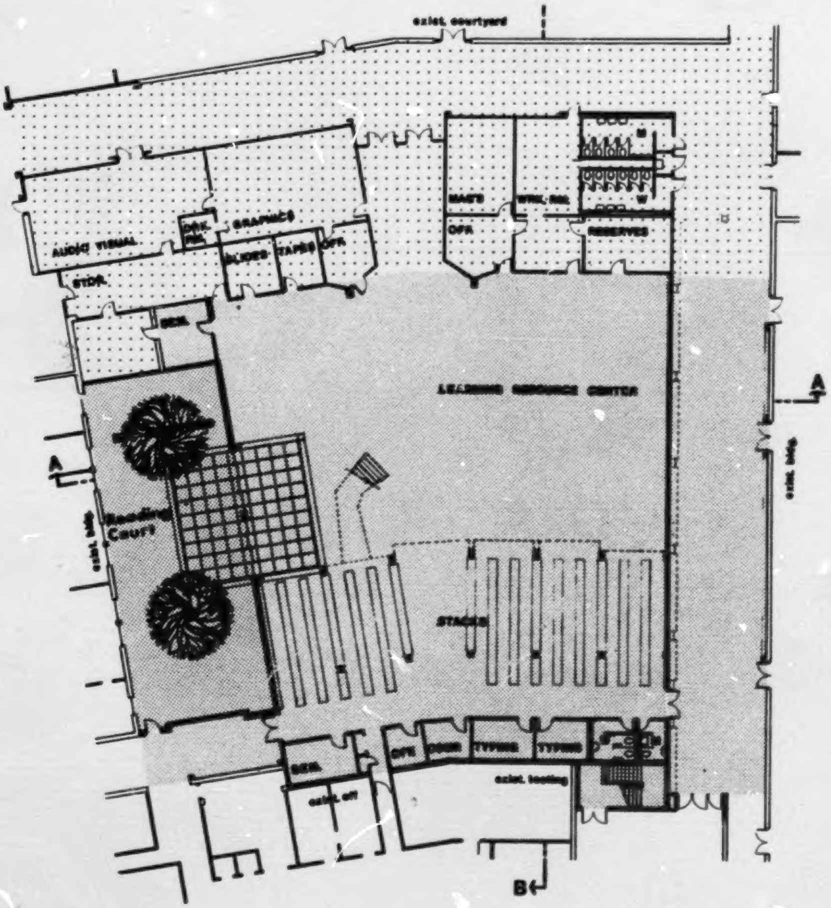

L.R.C. (below)
BALCONY
ALCOVE


exist. courtyard
AUDIO VISUAL
DEV. RM.
GRAPHICS
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SEM.
MAG'S
STRG. RM.
OFF.
RESERVES
LEARNING RESOURCE CENTER
A
A
exist. bldg.
Reading Court
exist. bldg.
STACKS
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TYPING
TYPING
SEM.
exist. off
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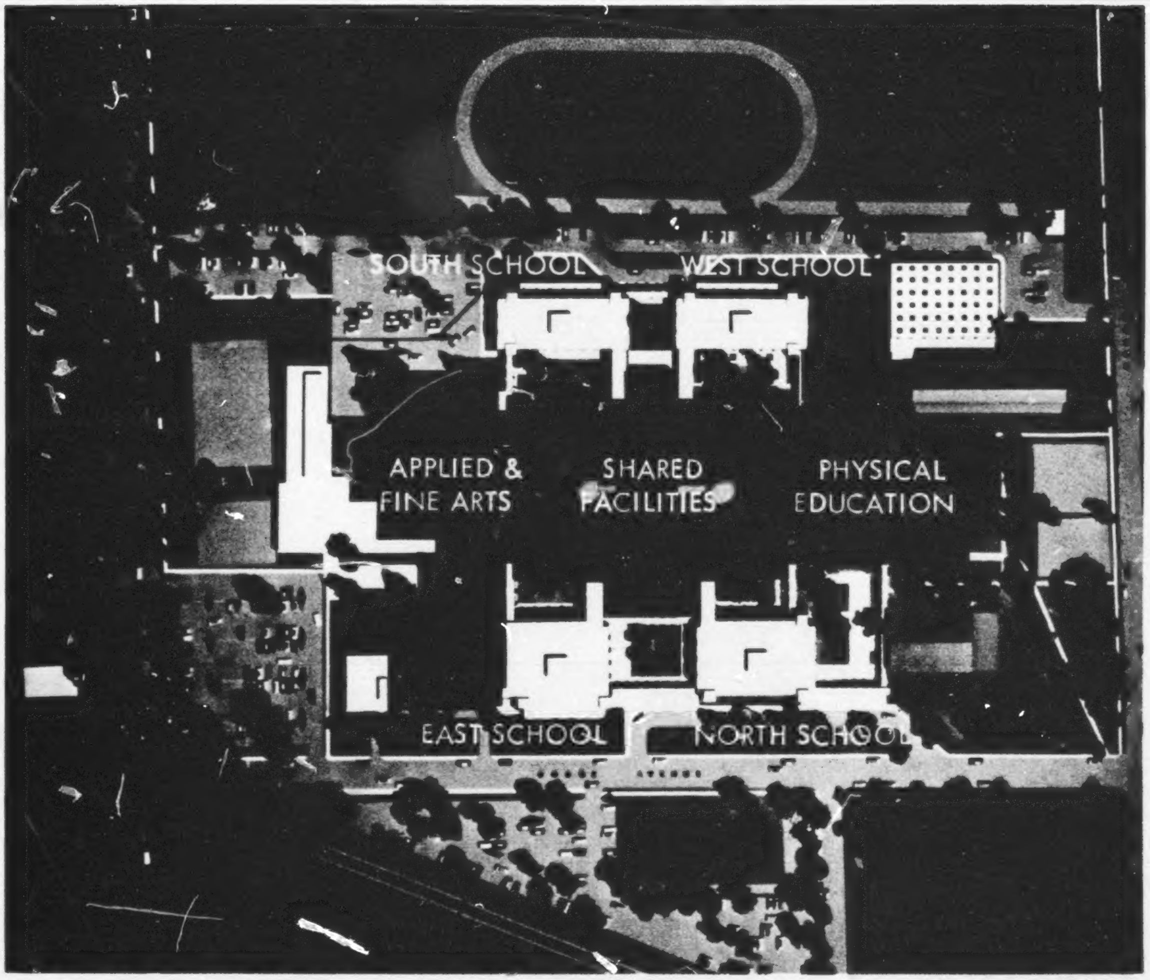
B

☐ NEW ▨ RENOVATED

Second Floor

First Floor

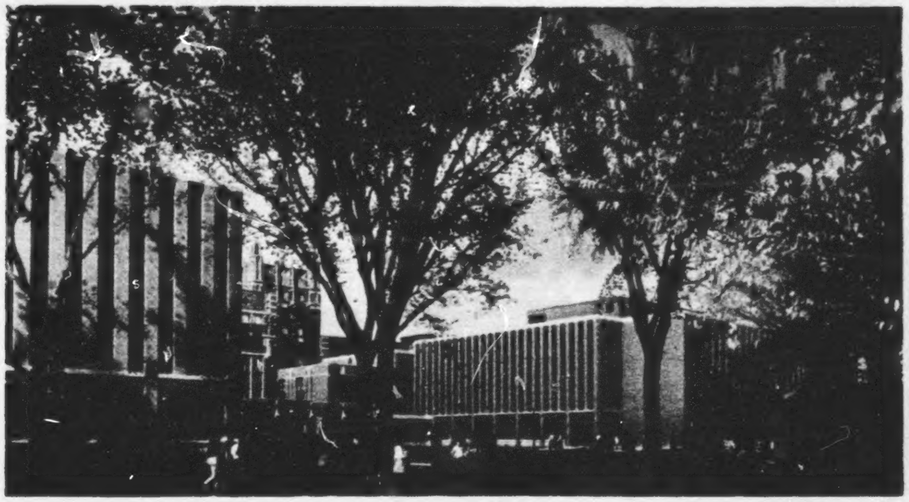

SOUTH SCHOOL
WEST SCHOOL
APPLIED & FINE ARTS
SHARED FACILITIES
PHYSICAL EDUCATION
EAST SCHOOL
NORTH SCHOOL

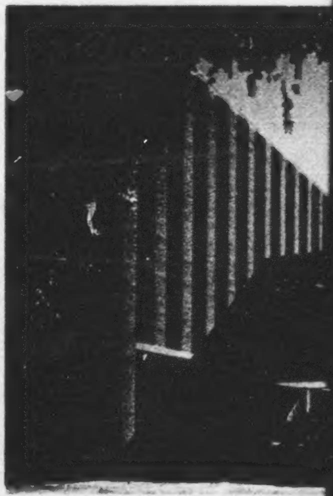
Evanston Township High Scho
Evanston, Illinois

Lloyd S. Michael, Superintend
Perkins & Will, Architects

To expand from a studen
3,500 to 6,000—to solve the p
characteristic of a large, comp
provide the advantages of a sı
new campus is four schools in
school serves 1,500 students a
academic facility, yet shares a
supervisory, and non-academ
Each school has its own learni
center that relates to a central
science center that relates to a
located advanced science lab,
dining facility served from a
center in the central building.
each school is composed of ar
classroom wing and a new ad

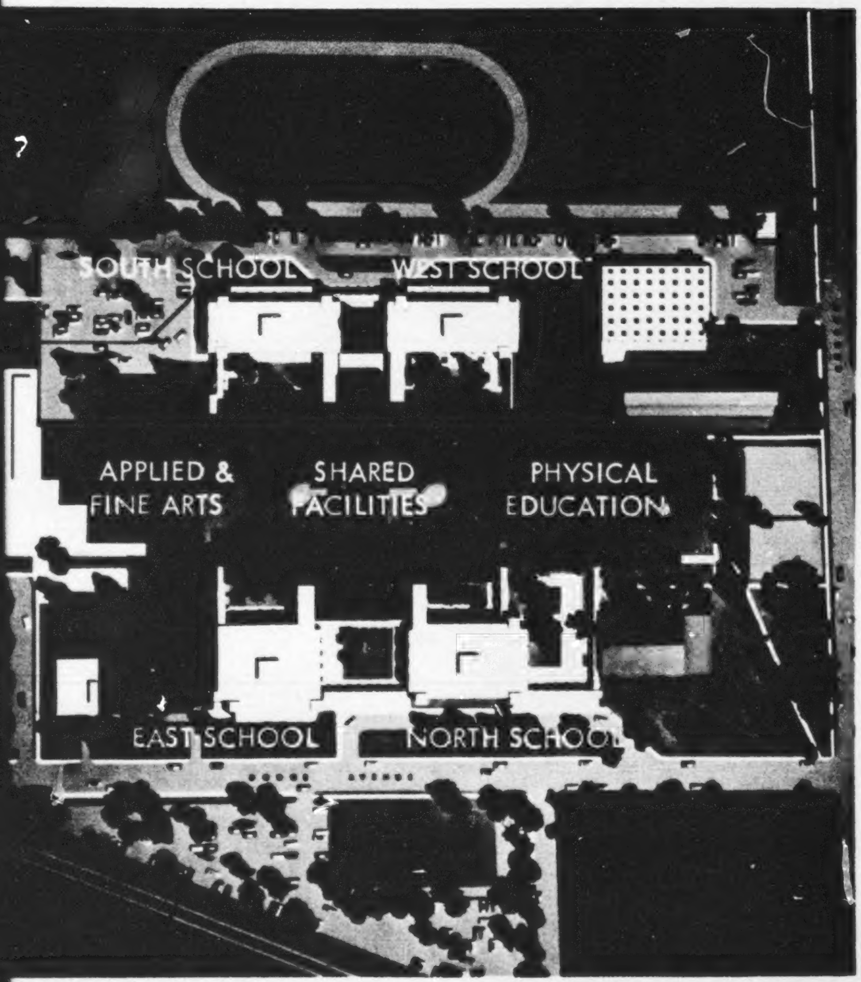
The two units, old and n
by a court and linked by conn
The varying designs of the co
individuality of each school.
designed to help the faculty p
attention to each student wit
school setting while utilizing
diversity and specialization p
a large school.





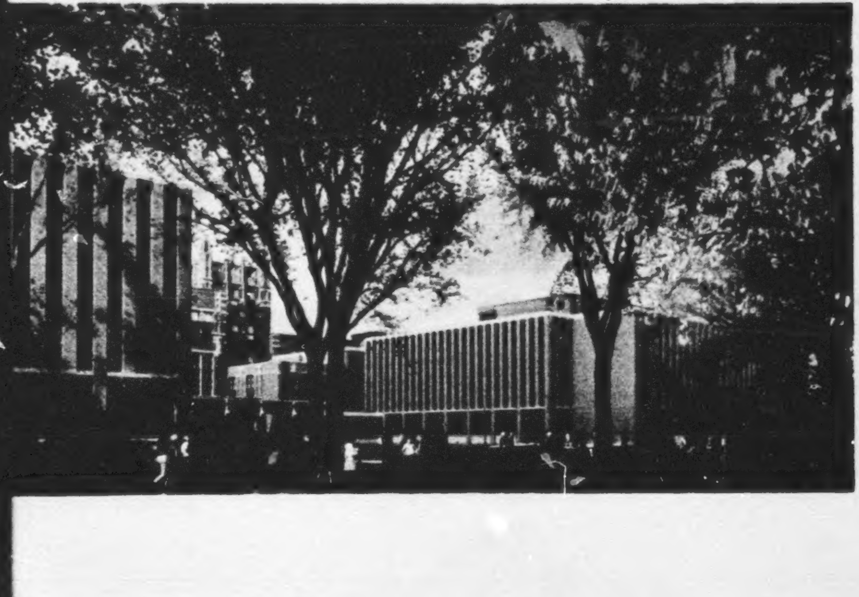
Evanston Township High School
Evanston, Illinois

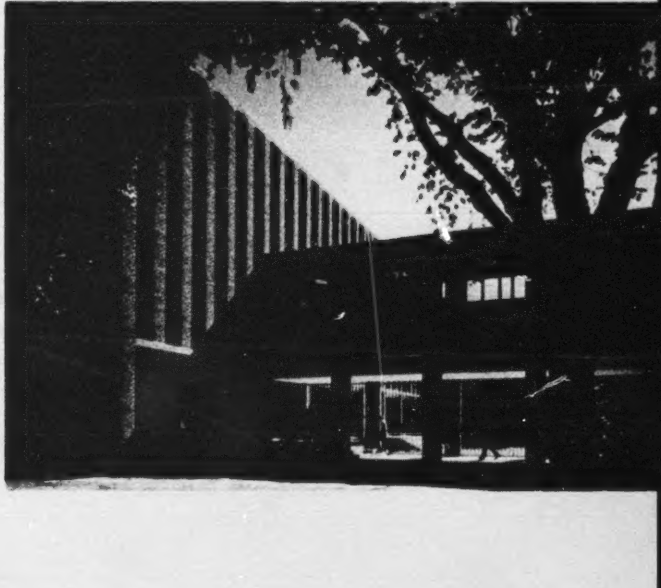
Lloyd S. Michael, Superintendent
Perkins & Will, Architects



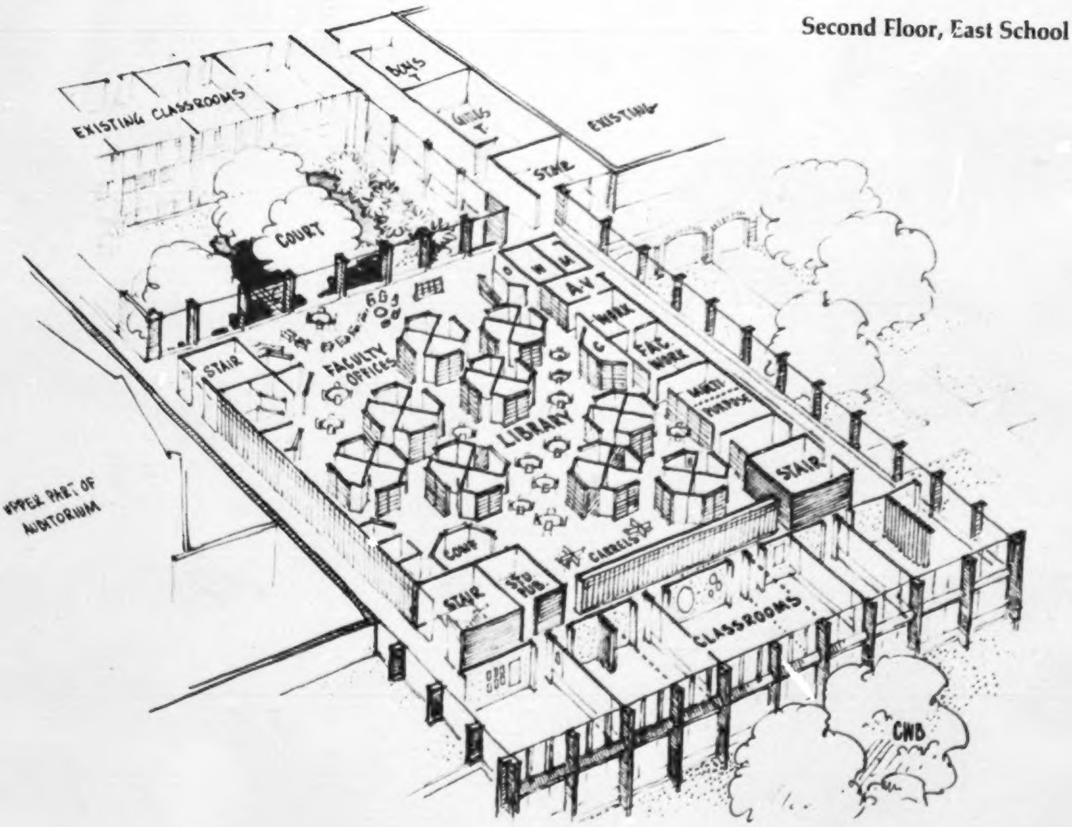
To expand from a student population of 3,500 to 6,000—to solve the problems characteristic of a large, complex school yet provide the advantages of a small school—the new campus is four schools in one. Each school serves 1,500 students and has its own academic facility, yet shares administrative, supervisory, and non-academic facilities. Each school has its own learning resources center that relates to a central library, its own science center that relates to a centrally-located advanced science lab, and its own dining facility served from a main preparation center in the central building. Physically, each school is composed of an existing classroom wing and a new addition.

The two units, old and new, are separated by a court and linked by connecting corridors. The varying designs of the courts reflect the individuality of each school. The solution is designed to help the faculty provide personal attention to each student within a small school setting while utilizing the assets of diversity and specialization possible only in a large school.





Second Floor, East School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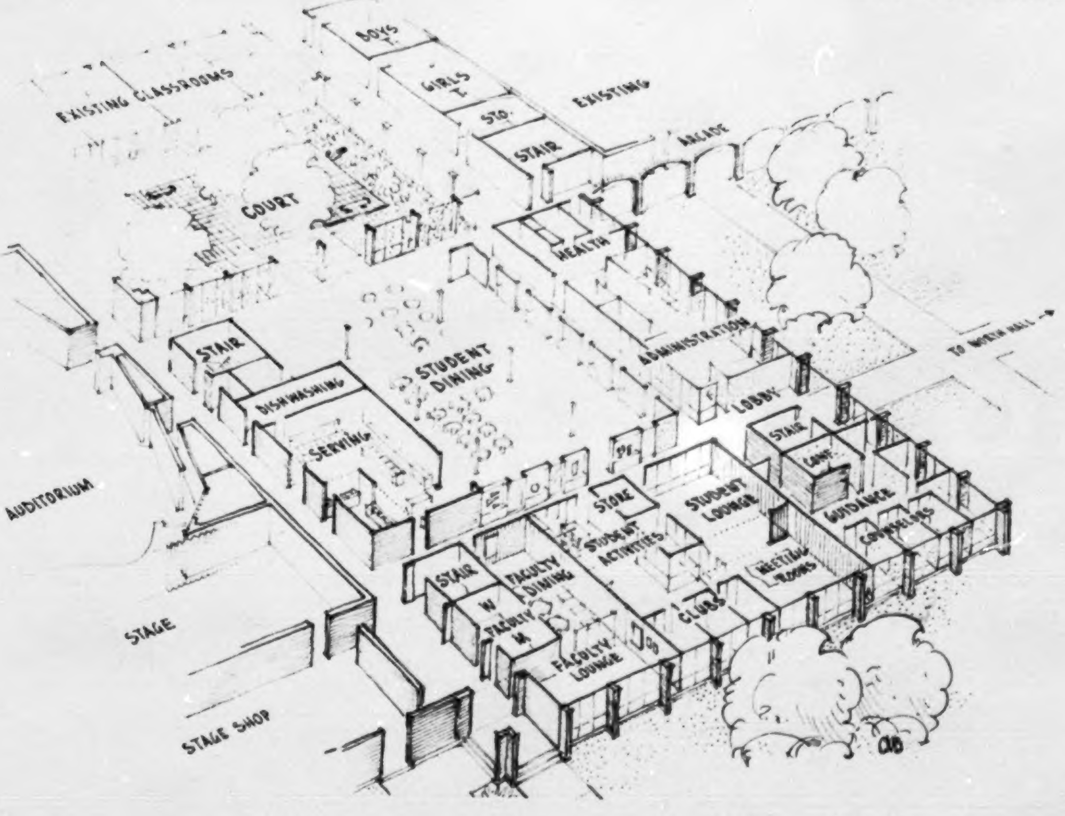
First Floor, East School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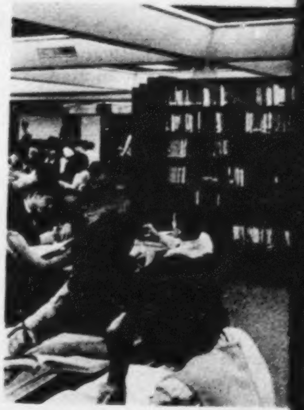

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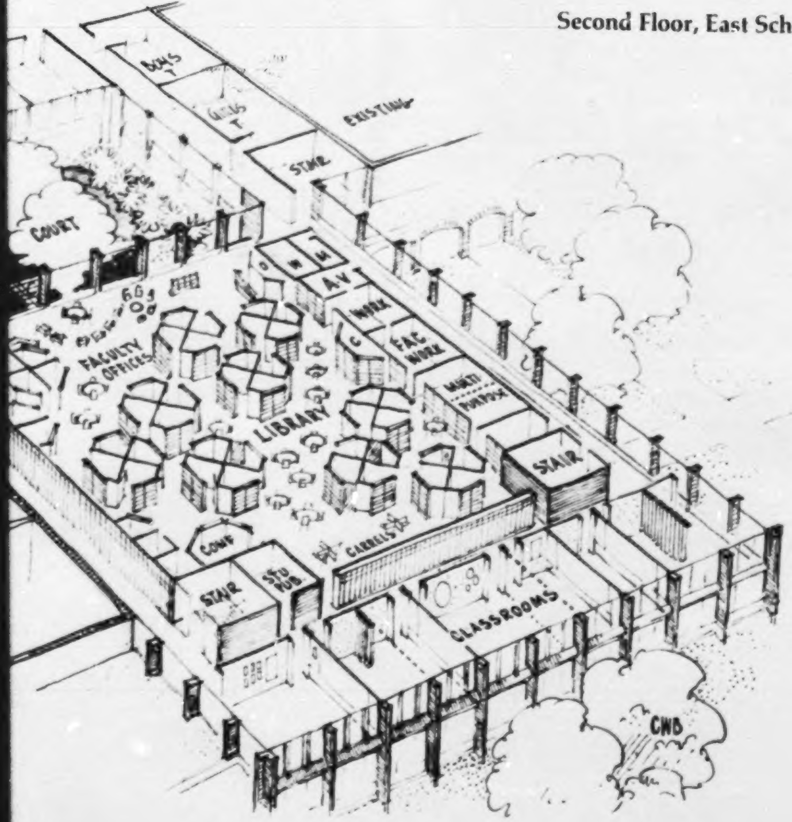
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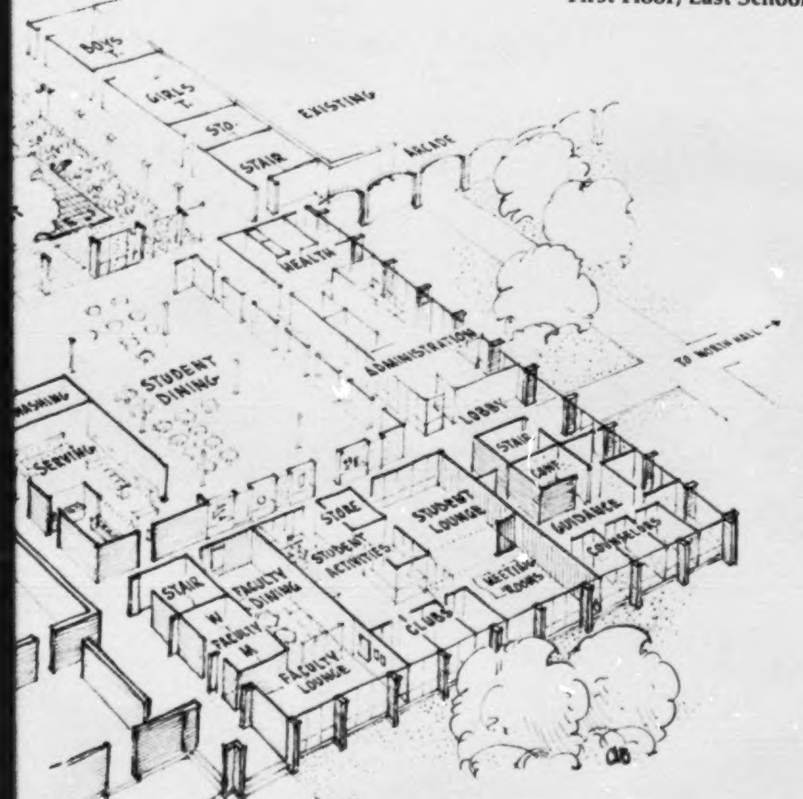
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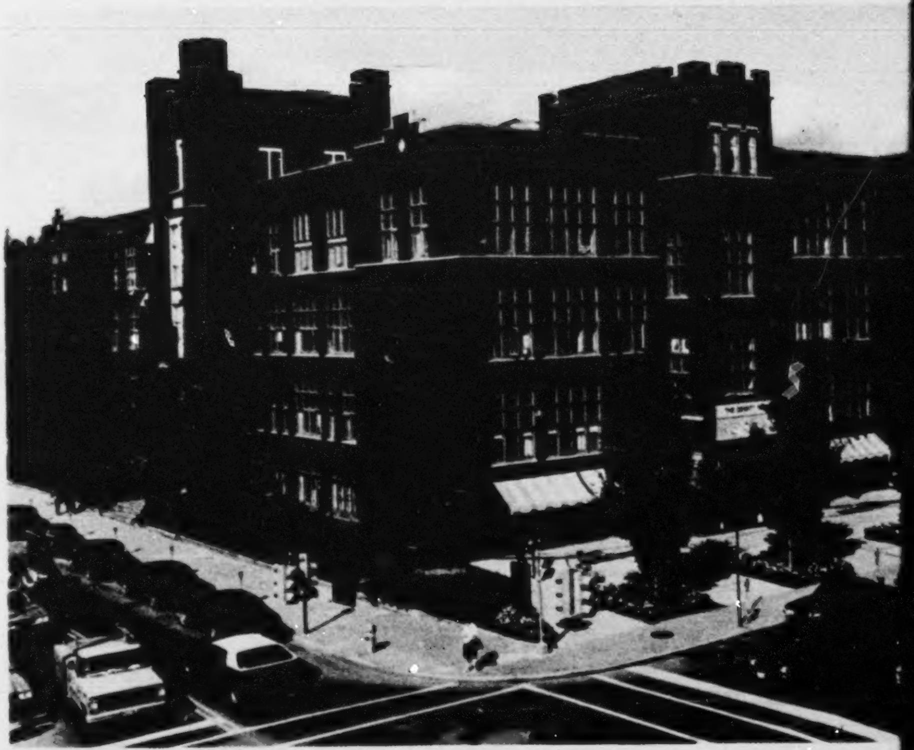
DeWitt Building
Ithaca, New York

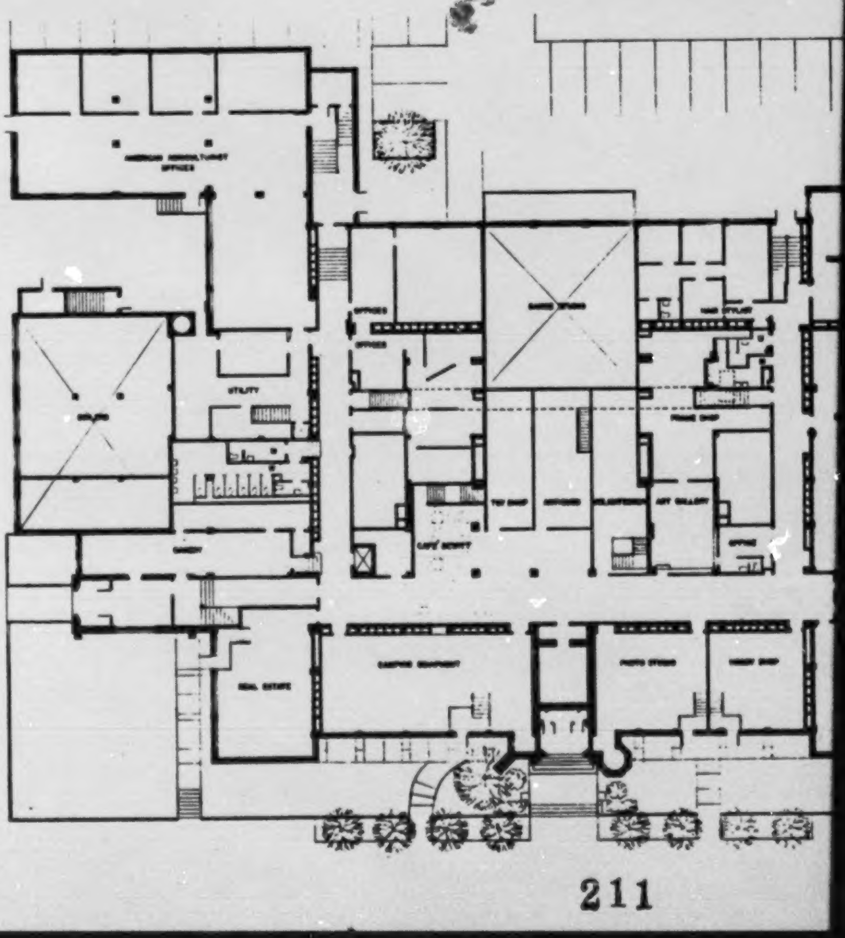
William Downing Associates, Architects for rehabilitation
formerly DeWitt High School
William Henry Miller, Architect



DeWitt High School was constructed in 1915 and served the community in that capacity until 1960 when a new high school was built and DeWitt became a second junior high. In 1970 it became evident that so much rehabilitation would be necessary to bring the building up to date educationally and structurally, that building a new junior high school would be preferable.

The building was ultimately bought by the rehabilitation architect who saved the historic structure and converted it into apartments and a lower level mall containing shops, offices and restaurant. It is a prime example of the successful re-creation of an old school.

Ground Floor Plan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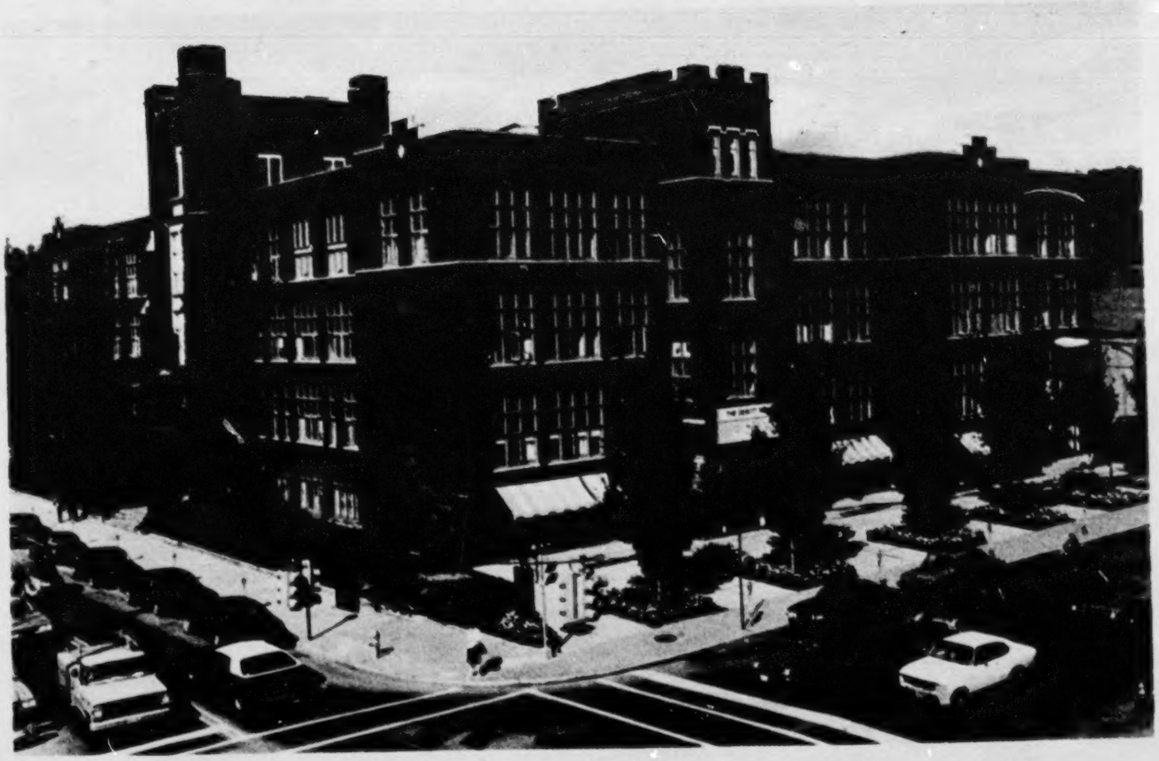
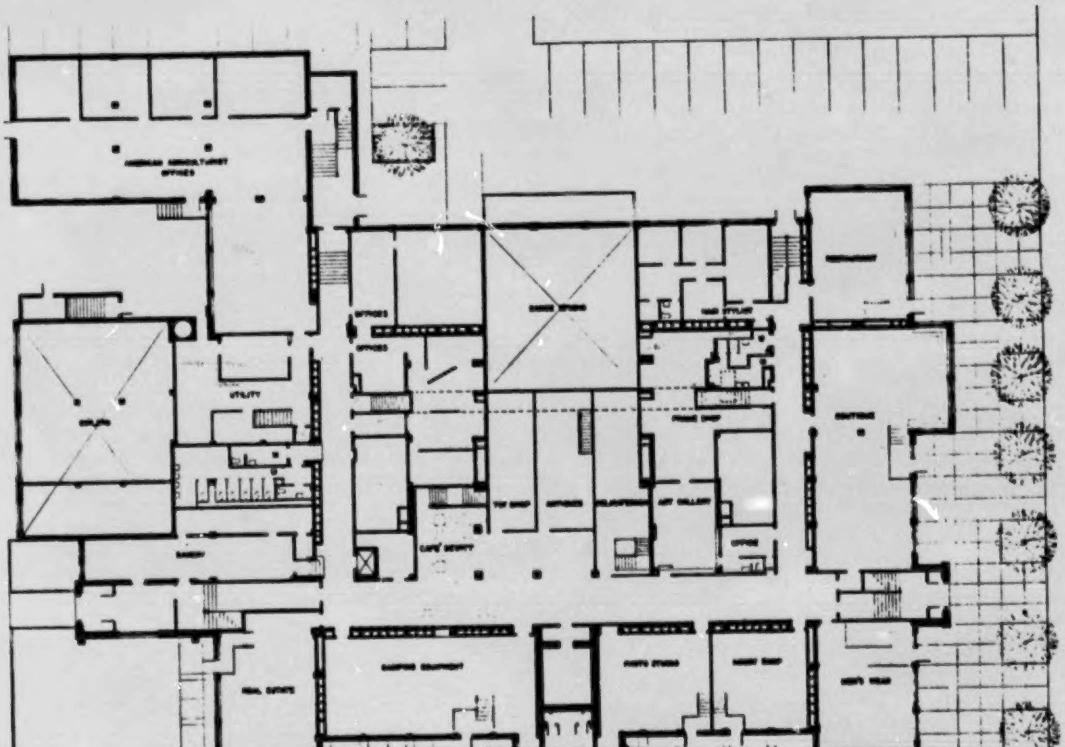


Ground Floor Plan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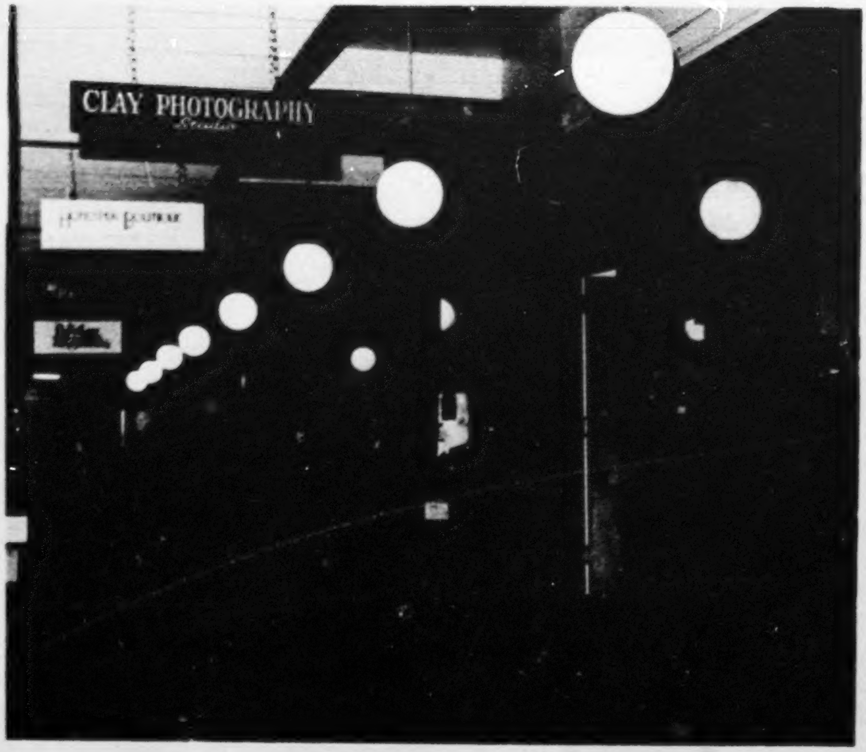
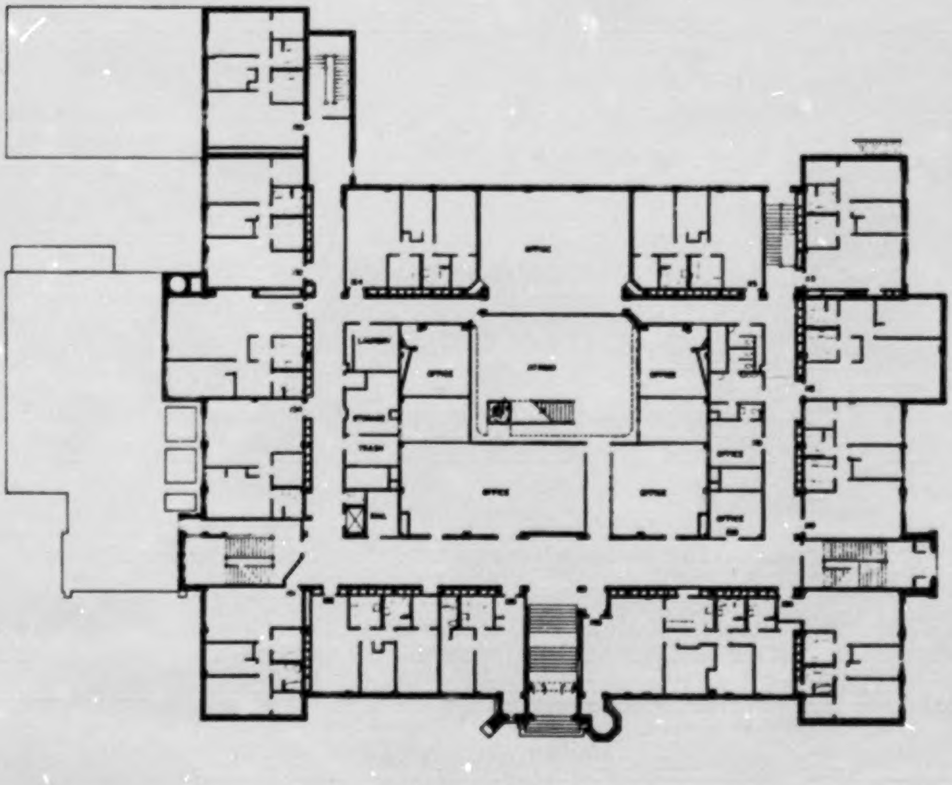
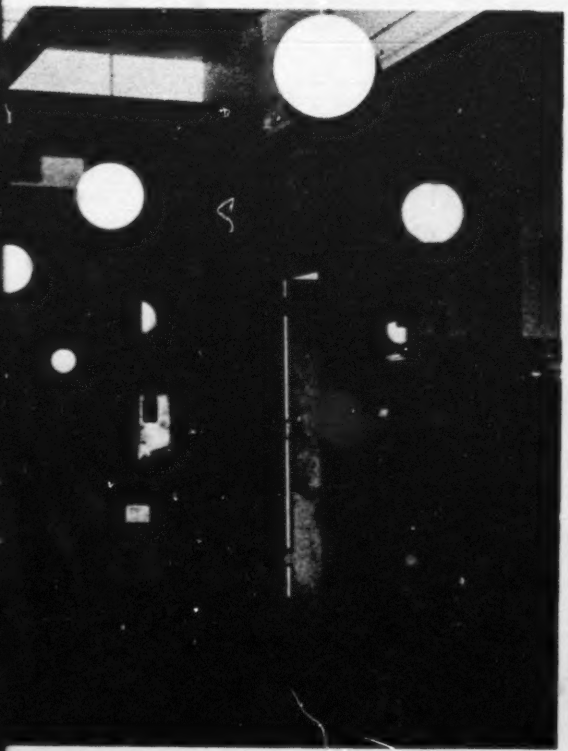
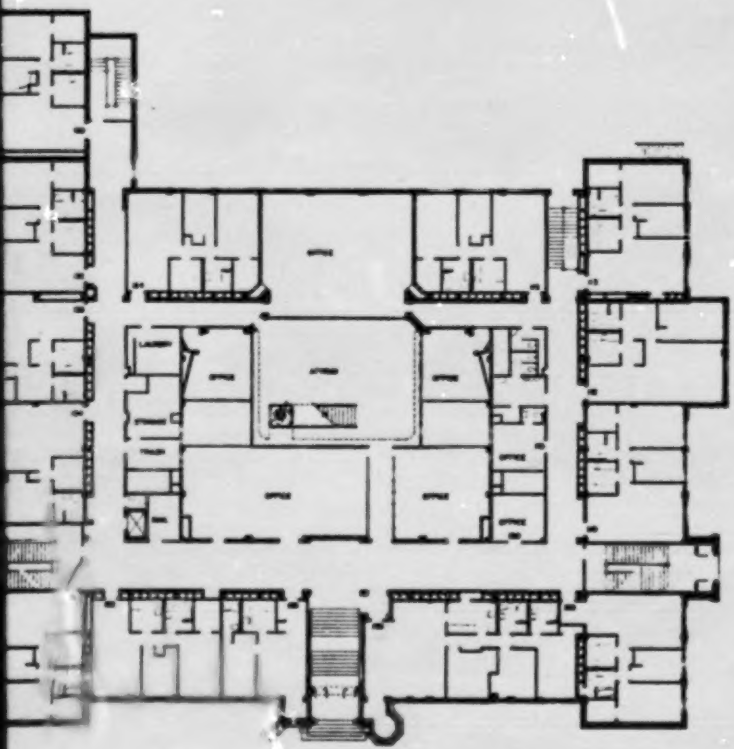

CLAY PHOTOGRAPHY

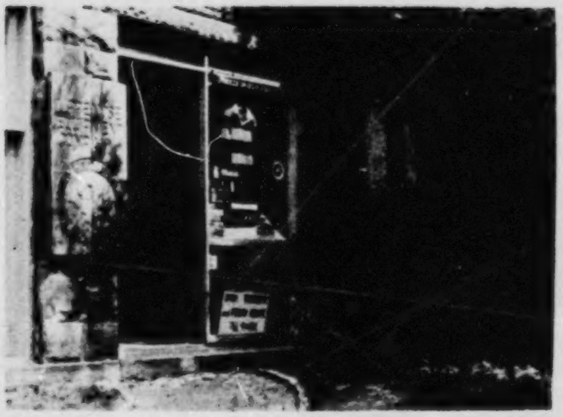
First Floor Plan







212



213

Highland Park High School
St. Paul, Minnesota

Donald W. Dunnan, Superintendent
Hammel, Green & Abrahamson, Architects

Located on a court between this high school and a junior high school sharing the site is the oldest school building in St. Paul which was relocated from its former site. It serves as a student classroom and meeting place, adds a distinctive visual note to the entire complex, and is an historically significant building.

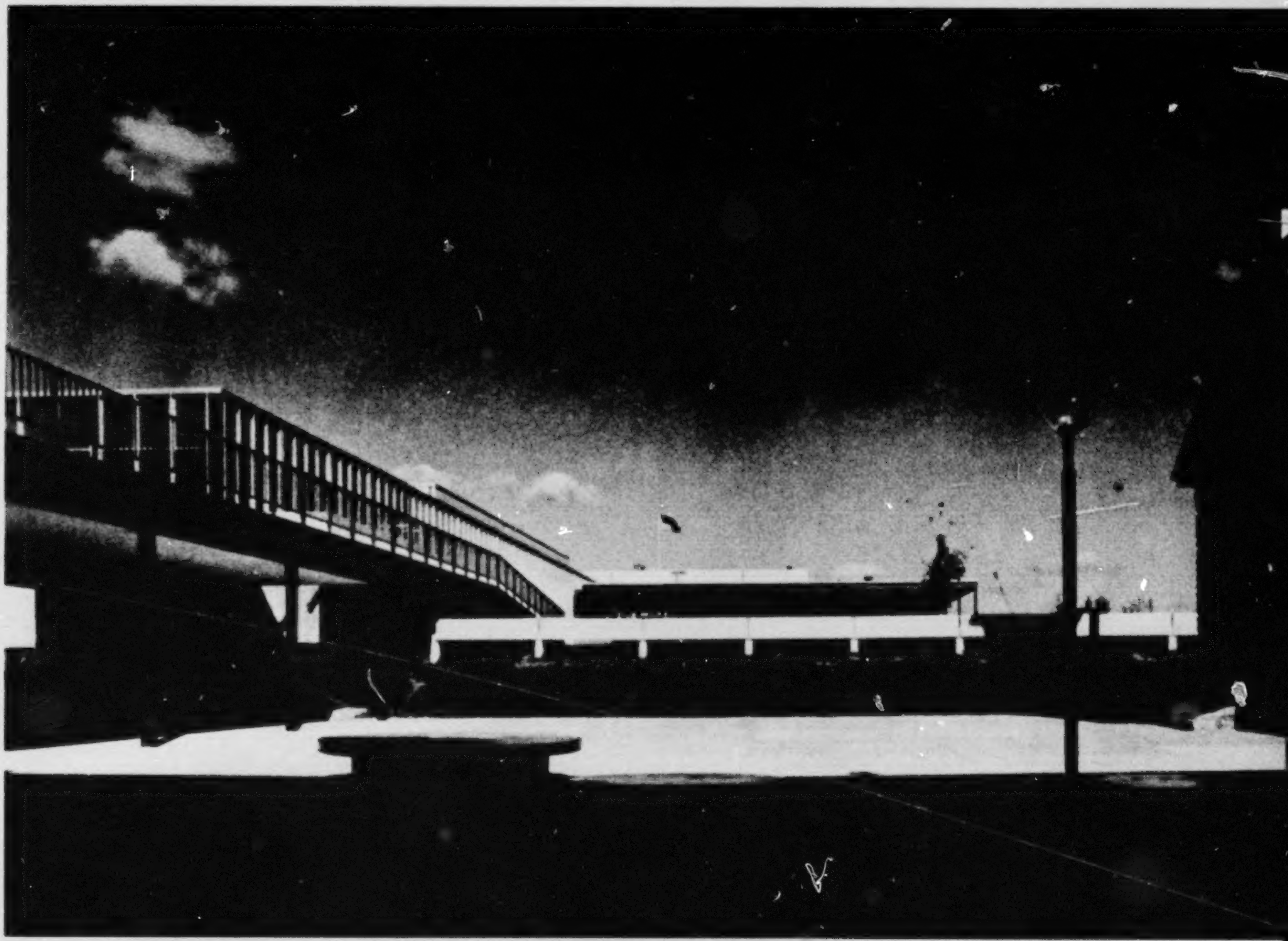


Photo and sketch credits

Page	
4	Harr, Hedrich-Blessing
6	Joseph W. Molitor
8	Douglas Lyttle
13	Rural Electrification Administration
14	Douglas Lyttle
17	J. Alexander
19	Len Johnson
20	Bill Hedrich, Hedrich-Blessing
21	Cole & Whyte Studios (Courtesy James Assoc.)
22	Douglas Lyttle
25	Cliff Moore
27	New York City Board of Education
28	Joseph W. Molitor
32	Douglas Lyttle
35, 36, 37	Frederick C. Matthews
38	Douglas Lyttle
40, 41	Charles William Brubaker
43, 44	Douglas Lyttle
45, 46	New York City Board of Education
49	Douglas Lyttle
51	Richard Passantino
54	Douglas Lyttle
56, 57	Perkins and Will
58	Bill Hedrich, Hedrich-Blessing
60	Harr, Hedrich-Blessing
61	Stan Tursman
62, 63	Wm. B. Ittner, Inc.
64	Susan Easton
65	Steve Weir
66, 67	Murals of the Northwest by Rubicam
68, 69	Douglas Lyttle
70, 71	Perkins and Will
72, 73	Lee Hogenson
74, 75	Hedrich-Blessing
76, 77	Anthony Hathaway
78, 79	Bob Hollingsworth
80	David Steidl
81	Ed Stewart
82	Rue & Butler
83	Murals of the Northwest by Rubicam
84, 85	Joseph W. Molitor
86, 87	William Blurock & Partners
88, 89	John Hobbs
91	J. Alexander

92, 93	Wm. B. Ittner,
94, 95	O'Donnell, Wi Pigozzi
97	Paul Norman
98, 99	Westside Com Schools
100	Bill Engdahl, H
102, 103	Ed and Carol Hi
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43, 44	Douglas Lyttle
45, 46	New York City Board of Education
49	Douglas Lyttle
51	Richard Passantino
54	Douglas Lyttle
56, 57	Perkins and Will
58	Bill Hedrich, Hedrich-Blessing
60	Harr, Hedrich-Blessing
61	Stan Tursman
62, 63	Wm. B. Ittner, Inc.
64	Susan Easton
65	Steve Weir
66, 67	Murals of the Northwest by Rubicam
68, 69	Douglas Lyttle
70, 71	Perkins and Will
72, 73	Lee Hogenson
74, 75	Hedrich-Blessing
76, 77	Anthony Hathaway
78, 79	Bob Hollingsworth
80	David Steidl
81	Ed Stewart
82	Rue & Butler
83	Murals of the Northwest by Rubicam
84, 85	Joseph W. Molitor
86, 87	William Blurock & Partners
88, 89	John Hobbs
91	J. Alexander
92, 93	Wm. B. Ittner, Inc.
94, 95	O'Donnell, Wicklund, Pigozzi
97	Paul Norman
98, 99	Westside Community Schools
100	Bill Engdahl, Hedrich-Blessing
102, 103	Ed and Carol Hirshberger
104, 105	Joseph W. Molitor
106, 107	William Blurock & Partners
108, 109	Anthony Hathaway
110	K/M Associates
111	SEDCO
112, 113	Flad & Assoc.
114, 115	Bill Rothschild
116	Wm. B. Ittner, Inc.
118	Bill Engdahl, Hedrich-Blessing
119	Orlando R. Cabanban
120, 121	William Downing Assoc.
122	Hammel, Green & Abrahamson